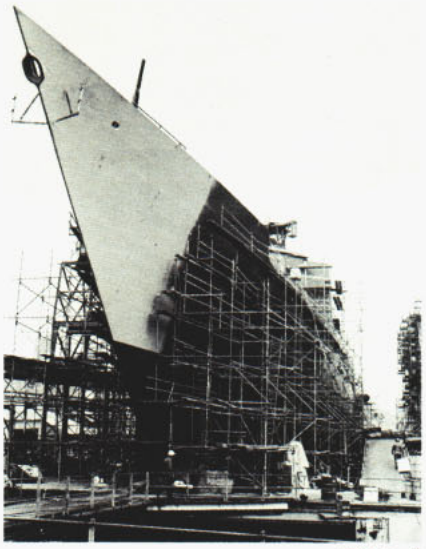
ALL HANDS

JANUARY 1977

Below: Aviation Boatswain's Mate 1st W. B. Doherty gives the launch signal to an AV-8A on board the USS Guam (LPH 9) in the Mediterranean. These are the same planes which took part in an aerial salute marking the 13th anniversary of Kenya in December. (Photo by PH1 C. V. Sneed.)



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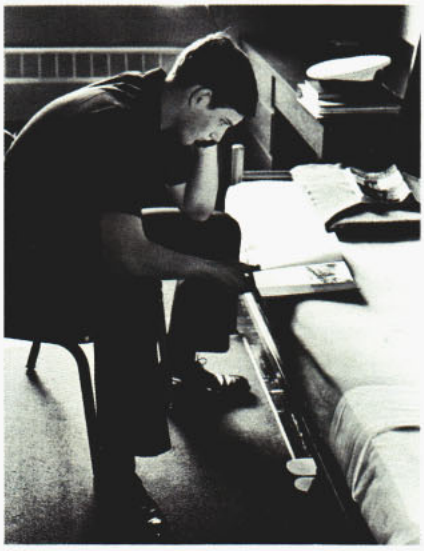

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ALL HANDS

MAGAZINE OF THE U.S. NAVY— 54th YEAR OF PUBLICATION
JANUARY 1977 NUMBER 720

Features

Departments

Covers:

Front: By MUC Vince Guthie
Back: By JO1 Jerry Atchison

Currents

Tomahawk Missile
Sets Flight Duration Record ● Cruising for an hour and 47 minutes recently over the Pacific Missile Sea Test Range, a Navy Tomahawk Missile set a record for cruise missile flight duration. The missile was launched from an A-6 aircraft and subsequently was guided by self-contained navigational and guidance system. Tomahawk can be launched from submarines, surface ships, aircraft and sites on land.

Navy League Award
Nominations Due February 15 ● Nominations for Navy League awards for exceptional performance are due at the organization's headquarters by Feb. 15, 1977. The league expects to honor nine Navy and Marine Corps officer and enlisted top performers and select a 10th recipient from either the retired Navy and Marine Corps or civilian government ranks. Nomination details are in SecNavInst 1650.34.

Navywide
Examinations for Petty Officers Third Through First ● The February Navywide examinations will be held on the following dates: Petty Officer Third Class, Tuesday, February 8; Petty Officer Second Class, Thursday, February 10; and Petty Officer Third Class, Tuesday, February 15. Examination dates have been modified for this cycle only, so that commands may submit and process E-3 and E-4 performance marks for the period ending Jan. 31, 1977. See BuPersNote 1418 of 26 Nov. 1976 for complete eligibility requirements.

New Requirements
for Accelerated Advancement Set ● Eligible "A" School students whose classes convene after Dec. 1, 1976, will have to wait four to eight months after graduation for accelerated advancement to E-4. Under the new accelerated advancement program, those "A" school graduates eligible for advancement to E-4 will be promoted after the waiting period and upon approval of the commanding officer of the unit to which they are assigned. Selectees for accelerated advancement under this program who are serving in paygrades E-1 and 2 may still be promoted to E-3 upon graduation from "A" school. To be eligible to receive accelerated advancement to E-4, the candidate must sign a service record entry stating he/she will serve at least five years' total active service and a minimum of two years' active service from the date of advancement to E-4. BuPersNote 1430 of 12 Nov. 1976 has the details.

SRB Bonuses

For Boiler Repairmen and Boiler Technicians ● Boiler Repairmen (BR) and Boiler Technicians (BT) who reenlist on or after December 1 can look forward to increased reenlistment incentives. The SRB level for BTs and BRs with three to six years' service will be increased from level five to level six. This means a BTSN with four years' service reenlisting for two years, could receive $4,906, instead of the previous $4,755. Also, members with six to ten years' service will be increased from level three to level five. Details are contained in NAVOP 148/76.

UNITAS XVII

Ends for Navy Ships - Aircraft ● After more than 24,000 miles of steaming and 350 individual training exercises, Navy ships and planes returned to their home ports following UNITAS XVII exercises with the major maritime nations of South America. This marked the first year a nuclear-powered submarine- USS Gato (SSN 615)- accompanied the international flotilla as it circumnavigated South America and transited the Strait of Magellan. The navies of South America participating included Argentina, Brazil, Chile, Colombia, Peru, Uraguay and Venezuela.

Space Shuttle

Applicants Sought By BuPers ● About 90 Navy people will be able to compete with civilian and other military applicants for 30 NASA Space-Shuttle positions this year. The Space Shuttle is a reusable spacecraft that will land like an airplane. It will perform a variety of missions such as deploying and retrieving satellites and operating specialized laboratories. Any Navy member interested in applying may get information on program requirements and application procedures from the Bureau of Naval Personnel or see BuPersNote 1331 of 10 October 1976.

Quick-Acting

Sailor Decorated for Thwarting Holdup ● A Navy petty officer received the Navy Commendation Medal for foiling an armed robbery attempt recently at the Pearl Harbor Credit Union. Boiler Technician First Class Marvin T. Hill also received a $200 cash reward from the credit union for his heroism– $100 of which was reimbursement of his own money lost in the robbery. Hill was waiting to make a deposit when the holdup happened. Two armed men drove their motorcycle to the outside deposit window and promptly shoved a sawed-off rifle into Hill's ribs while ordering the teller to turn over money. Hill knocked the rifle to the ground and in the ensuing struggle, two shots were fired, but no one was hit. Hill put the robbers to flight- one on foot, the other by bike. No money was stolen other than Hill's deposit. the bandits were later arrested. Hill said, "I was scared to death.'"

PERRY

COMMODORE WITHOUT A FLEET

OLIVER H. PERRY.

Commodore Oliver Hazard Perry had a problem.

During the War of 1812 he was tasked with securing Lake Erie against the British fleet. No easy assignment, particularly since Perry had no ships, few men and even less ordnance.

But Perry, in a very short time, saw that the ships were built, the men found and trained and ordnance stocked. A surprised British fleet was soundly defeated on Lake Erie.

Perry's ingenuity, economy and success as a naval tactician are but a few reasons why his name graces the first of a new class of Navy guided missile frigates (FFG).

When *Oliver Hazard Perry* (FFG 7) was launched recently in Bath, Maine, the characteristics which served Commodore Perry at Lake Erie were much in evidence. Like the lead ship's namesake, this class of over 50 FFGs will combine economy with effectiveness on the high seas.

The FFG's role is not new: escort and protect underway replenishment groups, amphibious forces, and military and mercantile shipping against submarine, aircraft and surface antiship missile threats. That's a complex task that must be accomplished in an age of restrictive budgets. But *Perry* is no ordinary ship.

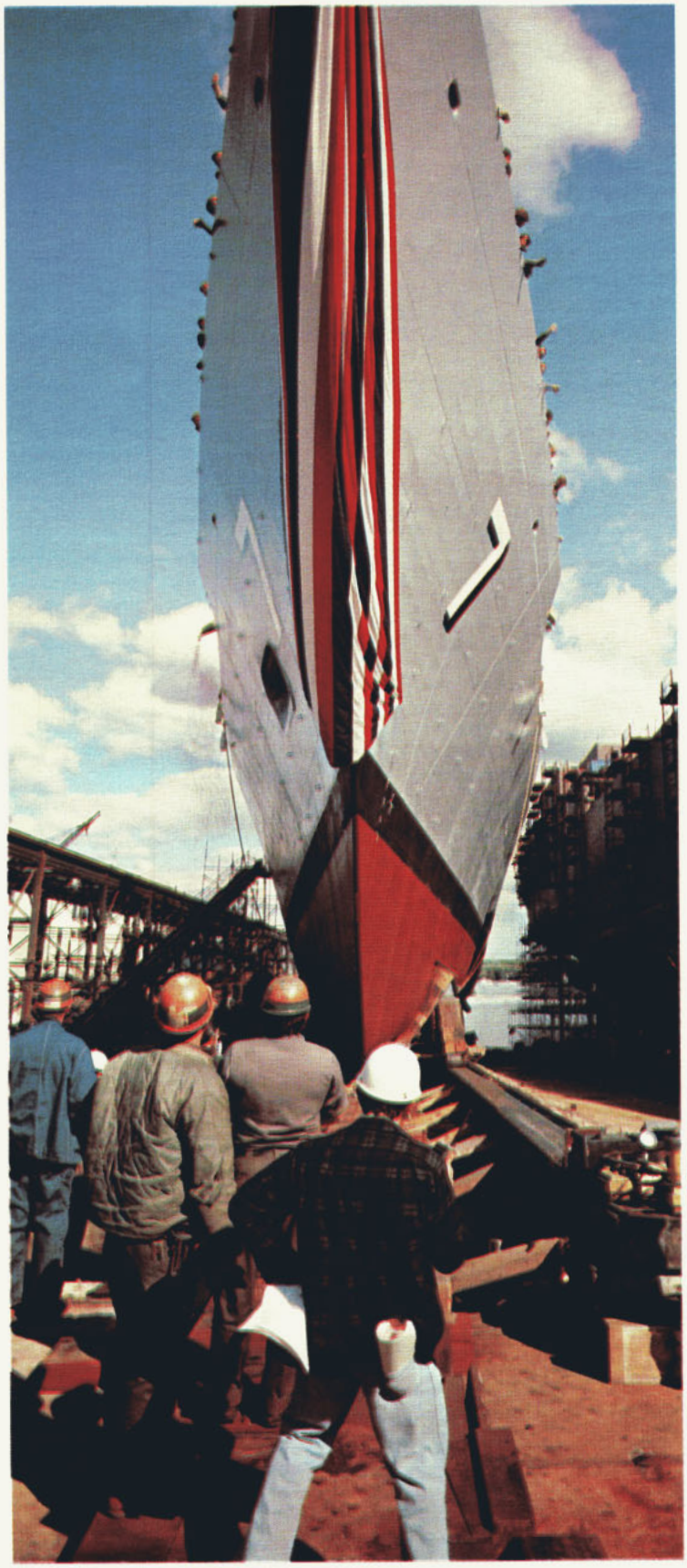
Consider economy and efficiency. Commodore Perry was forced to go to sea with only about half the men needed to operate his ships. Today's FFG will carry a crew about two-thirds the size of a comparably sized DDG-2 class destroyer. But the parallel ends there—while Commodore Perry couldn't *get* more men, FFG-7 *needs* no more men.

Oliver Hazard Perry's smaller crew size is made possible by the use of highly automated machinery systems and carefully arranged living and working spaces. For example, nearly all machinery systems are automatically controlled from an enclosed, soundproofed, air-conditioned central control station. Because of this, the engineroom and auxiliary machinery rooms will be unmanned, monitored only by a roving watch.

Two other arrangements also permit a smaller crew. First, many of *Perry's* shipboard systems will be doing double duty. For example, waste heat from the diesel generators is used to operate the distilling plant and to provide the crew's hot water.

Second, living and working spaces are arranged for maximum efficiency. All administrative functions are gathered in the central office complex, a combination of personnel and supply activities that reduces the number of clerical personnel. A bonus for the crew is that living spaces are more comfortable, being located closer amidships than is usual on ships of comparable size.

During the War of 1812, Commodore Perry had one thing going for him that a modern-Navy commander does not. He had a good idea what tactics and weapons the British could be expected to use at Lake Erie, and he realized that their choices were somewhat limited. Today's FFGs are being built to counter flexible enemy



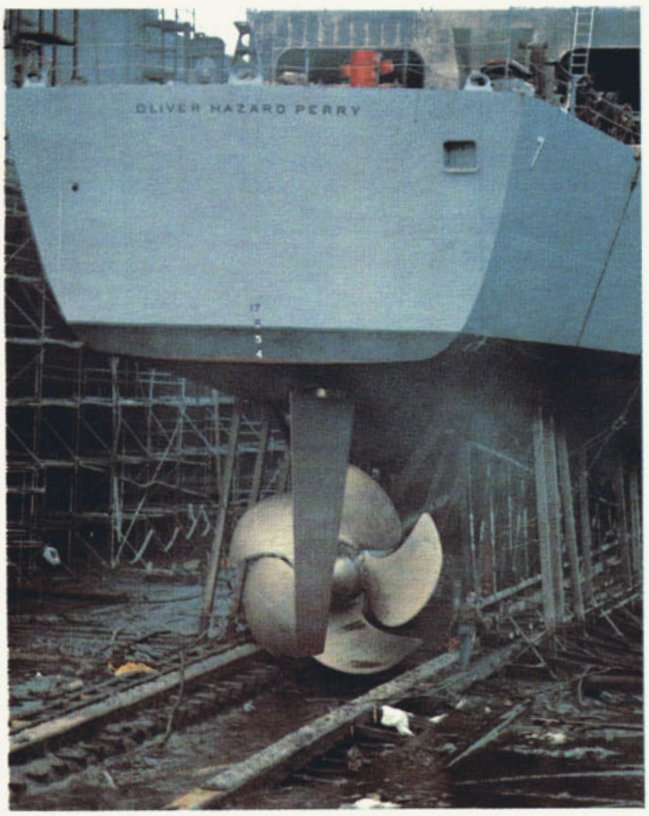
forces whose capabilities could change radically within their expected lifetime.

Perry has been designed with this potential change of mission in mind. Simplicity of design, modular construction and easy access to all machinery and armaments will allow this class of ships to keep pace with the ever-changing job of keeping the sea-lanes open.

Current plans call for *Perry* and her subsequent sister ships to be armed with *Standard* antiair and *Harpoon* antiship missiles. She will also carry a rapid-fire, 76mm anti-air and antiship gun and CIWS. Two light airborne multipurpose system (LAMPS) helicopters and the SQR-19 passive towed array sonar will give *Perry* frigates a long-range, antisubmarine warfare punch.

The FFG-7, with her twin gas turbine engines, controllable pitch propeller and many other sophisticated refinements, represents a dramatic change from shipbuilding in the days of Oliver Hazard Perry. The basic need to produce a fleet of sufficient size and strength to counter an enemy still remains. Commodore Perry might not recognize today's shipbuilding techniques used on the ship bearing his name, but he would certainly feel at home with the philosophy behind that construction. ⚓

(Compiled from a story by Michael B. Trainor and R. Bruce Montgomery of SupShip, Bath, Me.)



Toe-tapping Troubadours

Toe-tapping Troubadours

"I want an excitement in this band, a spirit so intense that anyone can feel the vibrations and know something is happening. I want the audience on the edge of their chairs, hearts thumping and turned on with excitement. I want them so totally involved that nothing exists for them except the Navy Band."

Commander Ned Muffley
Officer in Charge, U.S. Navy Band

BY LCDR DAVE KISHIYAMA, USNR-R, & JO2 DAN WHEELER

Those words, worthy of a John Philip Sousa, will not seem an overstatement to anyone who has heard the music of the United States Navy Band. Known to millions as "The World's Finest," the band has earned its motto, which was enhanced by appearing along with the USNA Drum and Bugle Corps in the inaugural parade.

That's pretty much the way it has been throughout its 51 years. Entertaining a national and worldwide audience that numbers in the millions by way of radio, television, record albums and on-stage performances, the band through its music has become one of the Navy's foremost ambassadors of goodwill.

"We are also a prime community relations vehicle," CDR Muffley said. "We take the music to the public and show them that their U. S. Navy is built on professionalism. This directly relates to our primary mission of recruiting and retention—that's what we're here for."

"Here for" usually means "there for" as far as band members are concerned. With its two annual tours, one in the fall and the other in the spring, the Navy Band performs 90 days on the road staging two shows daily, seven days a week. During the Spring 1976 tour, for example, the band traveled 11,000 miles, played 92 concerts in 53 cities, and reached a total audience estimated at more than 125,000. Additionally, in support of the Bicentennial, the various units which make up the entire Navy Band played 2337 performances in an 18-month period.

Invariably, even after hours of traveling, the band's performance in concert is flawless—a remarkable feat considering the frequency of transportation and inevitable "incidents."

(Once, while en route to a gig in New York, one of the band's charter buses was impounded by state troopers for displaying improper licenses. Facing an approaching deadline, all the luggage was hurriedly unloaded from the wayward vehicle and reloaded onto another charter.)

One might imagine that travel time is spent making merry music like that depicted in the "Big Band Era" movies—a mobile concert traveling down the interstate. Not necessarily so. Travel time is rest time and as such considered sacred to some members. Others prefer a more lively environment. But the Navy Band has found a happy solution to this apparent conflict.

When on tour, the band travels in two buses—one is called the "Saints" and the other the "Sinners." Those who ride in the "Sin-

Toe-tapping Troubadours

ners" bus prefer a grand time telling jokes, singing and skylarking. The "Saints," on the other hand, are a quiet lot. Going aboard their bus is like walking into a public library—even noisy breathing is frowned upon.

Personality differences such as this are an asset rather than a liability for the Navy Band. Differing tastes in everything from leisure activities to musical preferences account, in part, for the formation of various specialized musical groups within the overall band. These bands, performing in their own musical idiom, allow the Navy to extend its musical message to a large cross-section of audiences who also have somewhat diverse tastes in music.

Various components of the band include:

- CONCERT BAND—the largest group in the Navy Band's touring organization made up of 55 to 65 musicians out of 171 enlisted members and three officers. Within it are a brass quintet, a woodwind quintet and a saxophone quartet. It is this band that performs regular concerts in Washington and the two annual tours to designated sections of the country.
- PORT AUTHORITY — the Navy's answer to today's popular rock sound. Composed of bass, guitar, drums, trumpet, saxophone, Latin percussion and keyboards, Port Authority has performed everywhere from the White House to ghetto neighborhood concerts.

Formed in 1970 when it was realized that rock music had a distinctive cultural importance to youth, this band is a far cry from the fife-and-drum image of the early military bands. Playing rock, jazz, top 40, Latin and soul, this group relates to today's young people. Much of the music is original—composed by members—but their concerts also feature hits and up-to-date arrangements of rock classics.

Port Authority has been invaluable in recruiting and retention and plays for Navy people and civilian audiences worldwide. "Because of this type of music," said its leader, Chief Musician Mike Beegle, "I feel I have a closer rapport with young people than I would otherwise have."

- COMMODORES—a big (20 strong) band-pop-jazz-rock ensemble which has been in constant demand. Developed in 1969 as a dance band, the Commodores

brought an added dimension to the Navy Band by playing many of the old standards along with current pop tunes.

"Everyone here is a professional and is playing the type of music he likes," said Senior Chief Musician Jeff Taylor, director of the group.

• SEA CHANTERS—this 15-member, all-male singing group maintains rapport with audiences of any age and, according to Chief Musician Joe Doogan, first tenor, it is "unique in the world's navies." The Sea Chanters, naturally, specialize in sea chanties—those folk songs of the sea, but they also sing traditional ballads and songs to fit almost any occasion.

Performing in a composite uniform which represents the diverse shipboard uniforms worn by the young Navy of 1812, the choral group may appear with the concert band or alone in programs from sacred to secular, contemporary to classic or anything in between. They're under the direction of Senior Chief Musician Robert Sisson.

• CEREMONIAL BAND — a 27-piece unit that is the core of the Navy Band's primary mission of providing music for ceremonies and support functions in and around the Washington area, especially at the seat of government. The group, under the direction of Senior Chief Musician Art Accardo, performs at ceremonies honoring foreign heads of state and representatives, or American dignitaries during official functions at the White House, Pentagon or State Department.

The band is also used to provide musical support for monthly command reviews including retirements and changes of command, those events incident to patriotic occasions such as wreath-laying ceremonies at many of the historical monuments in Washington, and is on daily standby for funerals at Arlington National Cemetery.

• COUNTRY CURRENT — a seven-member group specializing in America's grassroots' music. It is the only group among the major military bands that caters to music considered native American.

"Our music appeals to all age groups and is being accepted nationwide," said Musician First Class Joe Barnes, one of the band's members. One of the most highly acclaimed groups in its category, Country Current recently scored a first for the Navy as the only military band ever to appear live on the Academy of Country Music Awards Show.

Regardless of which group within the U. S. Navy Band a musician aspires to, professionalism is the key to becoming a member. Chief Warrant Officer David Kunkel, operations officer for the band, said that among the Navy Band members there are "13 to 15 master's degrees and one Ph.D." Additionally, 80 per cent have college degrees. But the degree alone doesn't carry enough weight to gain entry.

"Our standards are so high," remarked Senior Chief Musician Jere Wallace, the band's announcer and public affairs officer, "that only a few are even invited to audition." Selected musicians, usually from colleges and universities, and some from the fleet, are invited to come to the Washington Navy Yard at their own expense for a tryout. Only four or five auditions are held monthly and preference is given to talent from the fleet.

The musician who passes this hurdle can then earn a spot on the band, if one's available. A minimum E-6 rate is attained although those entering from civilian life must still complete boot camp. A member's tour of duty with the band is set at three years, but those wishing to remain are allowed to do so as long as they are qualified.

As a result of this careful screening, the Navy Band has consistently maintained high standards. In 1935, the American Bandmasters Association recognized the Navy Band as the outstanding band in America and bestowed upon it the famed motto "The World's Finest." No other military band has been so honored.

"They're the best in the world," declared CDR Muffley. "We are the show people of the Navy and we have a lot of talent here. Symphony musicians generally don't think of us as on their level, but we are. This is my fourth year to be invited by Arthur Fiedler to guest-conduct the Boston Pops and each year I take a soloist with me. They have all received the same acclaim —'Bravo, bravo'!"

Though the band's members are recognized professionals, they still find time for a few lighthearted

Toe-tapping Troubadours

pranks. Once while en route to Indiana, the band passed through a small town in Ohio called Gomer. Proudly displayed above a solitary grocery store was a sign stating that Web Bumford was its owner. For some mischievous reason, the band took a liking to Bumford without ever meeting him and decided to send him cards and letters throughout the tour. Poor Mr. Bumford received a mailbox-full of cards and letters daily from people he did not know and never expected to meet.

After the concerts in Indiana, the band headed back to Ohio late in the evening for a scheduled concert in Gomer the next day. Upon arriving a few miles from Bumford's home, they telephoned him to say that the "U. S. Navy Band was holding a parade in his honor" and they would be marching by his house at about 11:00 that same evening.

When the band arrived, Bumford and numerous friends greeted it. Tacked to his home's facade were every letter and card he had received. A buffet had been prepared in the family room. Of course, an impromptu concert followed, with Bumford — a very friendly 70-year-old — guest conducting with great enthusiasm.

For years thereafter—as regular as Santa Claus—the Navy Band received a Christmas card from Web Bumford, an unpaid Navy recruiter worth his weight in goodwill.

There are of course many such fun moments, but it is primarily a love of music and its lifelong study that draws these dedicated musicians together. "We eat, drink and breathe music," CDR Muffley asserted.

It's a diet that the Navy—and music lovers everywhere — are happy to live with! ⚓

'blow dem horns'

With less sleep than a midwatch in between, the Naval Academy Drum and Bugle Corps recently performed for 7000, then for millions.

The 88-member Corps came to Long Island on Thanksgiving Eve at the request of Navy Recruiting District, New York, for a half-time performance at the New York Nets/ San Antonio Spurs basketball game.

Following a standing ovation from the 7000 fans, the Corps boarded buses and headed for New York and the 50th annual Macy's Thanksgiving Day Parade.

Five-fifteen in the morning comes pretty early for most people. But at that time the groggy midshipmen found themselves at 34th St. and Broadway, rehearsing for a two-and-one-half-minute routine for the television cameras.

After rehearsal and a short breakfast, the midshipmen were hustled uptown to their formation location —and a two-hour wait for the parade to begin.

The two-and-one-half-mile parade viewed by millions around the world, capped a hectic 24-hour schedule for the Corps. And it gave the men and women of the Naval Academy Drum and Bugle Corps a chance to play Anchors Aweigh up close—for the West Point Glee Club. ⚓

The MacKenzie

It's only natural that a plank owner or two would show up at a ship's decommissioning. The odds make it far less likely, however, that a "bottle holder" also would be on hand.

By way of clarification, we hasten to add that a "bottle holder" is the ship's sponsor who still retains the champagne bottle used to commission the ship. This in spite of the more than 30 years that have slipped by the boards from the time the ship first hit the water till she was struck from the rolls.

"I still have that bottle," Donna MacKenzie Renard said last month at the San Diego decommissioning of the destroyer USS *George K. MacKenzie* (DD 836). As a nine-year-old on May 13, 1945, at Bath, Maine, Donna launched the destroyer named for her father. Lieutenant Commander MacKenzie, posthumously awarded the Navy Cross, lost his life as skipper of the submarine *Triton* (SS 201) in the Southwest Pacific in 1943.

Today the wife of a Navy officer, Mrs. Renard has kept in close touch with the destroyer as she steamed more than a million miles in the last 31 years. Her husband, Captain J. W. Renard, drew the *MacKenzie* as his first duty out of the Academy in 1955. He, therefore, is included in the list of more than 6,000 officers and men who served in the ship over the past three decades.

Also present at the San Diego ceremony was Mrs. Renard's aunt, Jean MacKenzie, now a retired chief aerographer's mate. She joined the Navy—serving 23 years—following the sad loss of her brother in 1943.

In the May 1976 issue of All Hands we featured USS *MacKenzie* and said, "She's Got Heritage." Little did we know how much heritage.

Out of commission and off the rolls, the destroyer will continue to serve the Navy in an important way. She is slated to become a target ship for submarines in training. Somehow we feel the late LCDR MacKenzie would have liked that. ⚓

Connection

Above left: Nine-year-old Donna MacKenzie at the 1945 launching of the destroyer named for her hero father.

Right: Donna MacKenzie—now Mrs. Renard—at the recent decommissioning of DD 836 in San Diego. She is flanked by her husband, CAPT. J. W. Renard, and her sister, Jean MacKenzie.

Midnight oil and no naps at

STORY BY JO2 DAVIDA MATTHEWS
PHOTOS BY JO3 D. HOCH

They come from all over the country, their backgrounds as diverse as their reasons for entering the school. The 280 students who make up the class of '77 at the Naval Academy Preparatory School (NAPS), Newport, R. I., are bound by a common goal—entrance into the Naval Academy.

Enthusiasm and determination are reflected in their faces, their voices.

"I spent two years in the fleet as an enlisted man," said Tom Homan, a midshipman candidate at NAPS. "I know the Navy is what I want and for me, that means the Naval Academy."

Last year, Anthony Barnes was a high school student in Savannah, Ga.; now he marches with the best of them. "I considered going to a regular college, but when I decided to go Navy, it had to be the Academy."

Each of these young men was motivated to become a naval officer, but his Scholastic Aptitude Test (SAT) scores were too low to meet the Academy's entrance standards, just one reason a student enters the NAPS nine months of training.

"Being out of school for two years and not using what I had learned affected my score," said Homan, a Pennsylvania native. "NAPS is a refresher course so I can bring that SAT score up."

"In my high school," Barnes explained, "the emphasis was on sports. The academics part I learned but didn't retain past the exams. So, I have to relearn a lot of the material and, more importantly, develop my study habits."

Many of the students at NAPS could qualify for entrance into the Academy but they entered NAPS to increase or strengthen their qualifications. For others, the school is an opportunity to decide if the military is the life they want.

"The prep school provides an avenue for deserving Navy and Marine Corps enlisted people, regular and reserve, to get into the Academy," explained the school's director, Commander R. H. Schmidt. "We do this by strengthening their academic backgrounds and preparing them militarily, physically and mentally."

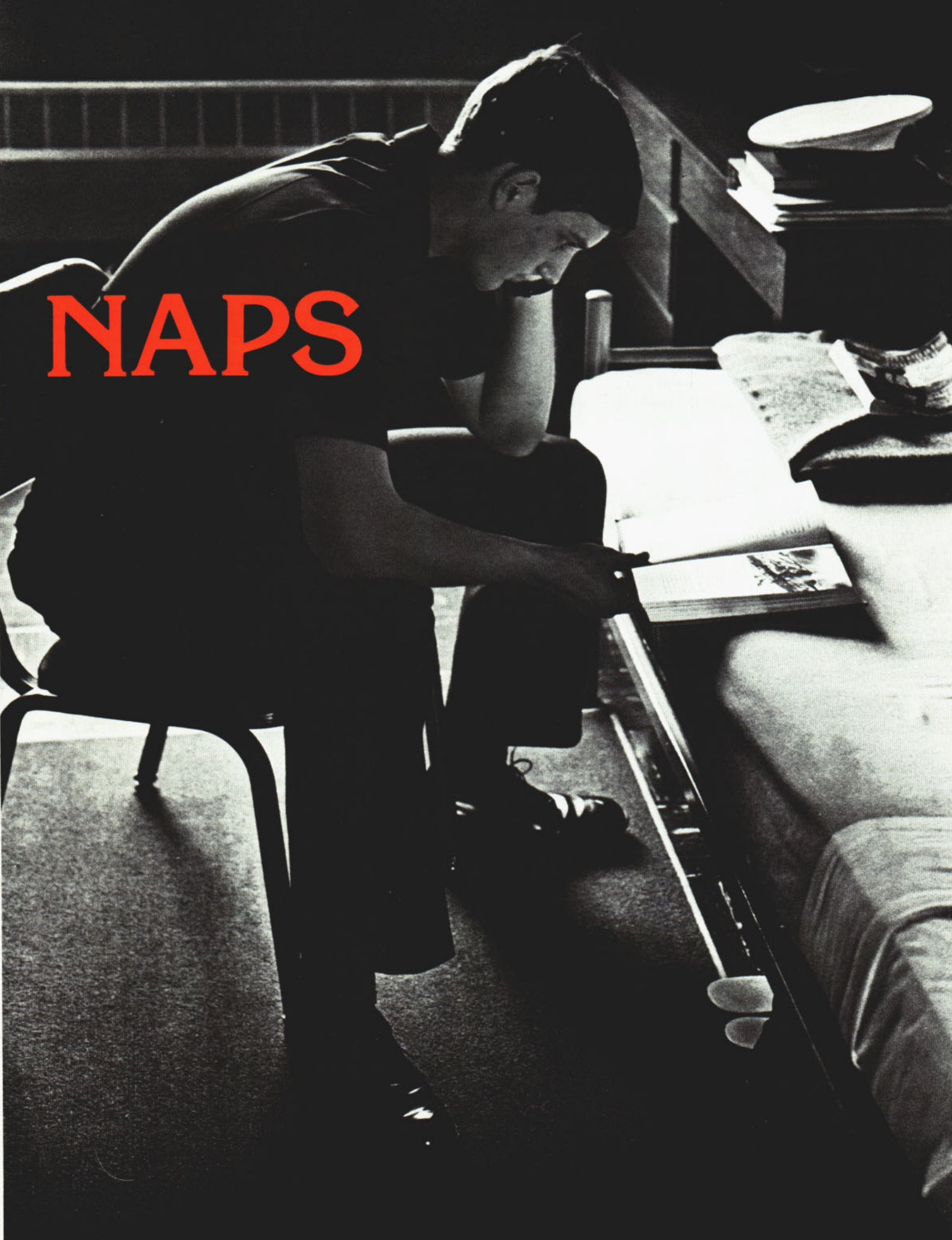
Thirteen enlisted men made up NAPS' first class back in 1915. The school is the Navy's third oldest, antedated only by the Naval Academy and Naval War College.

Over the past 60 years, NAPS has changed sites several times, moving between Norfolk, Va., Bainbridge, Md., and Newport, its home since 1974.

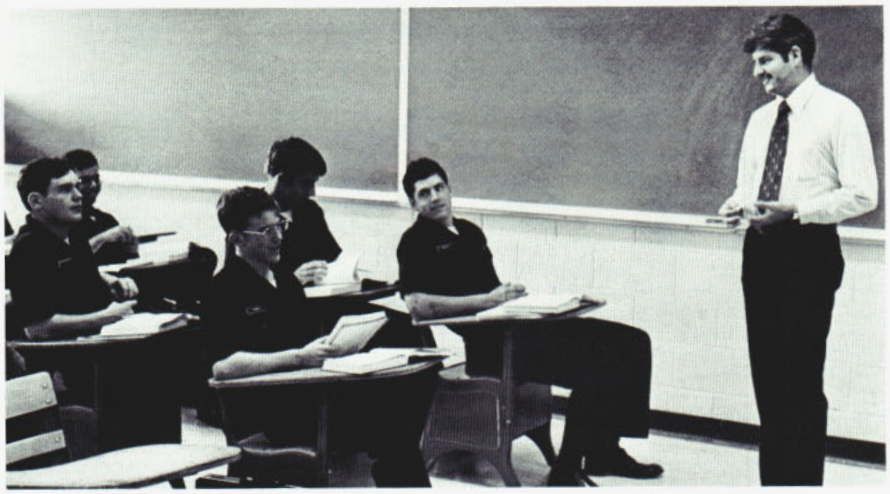
The school is located on the tip of a small peninsula jutting into Narragansett Bay, an area noted for its scenic countryside and coastline. One student describes the Newport area as "good liberty," a phrase that needs no further clarification. But liberty for the students is but a brief weekend respite before they return to the rigors of the classroom.

Classes start at 0800. The midshipmen candidates are up and at it long before that, getting some of the military training CDR Schmidt spoke about. By the time the sun chases away the early morning mists over the bay, the students have cleaned their quarters, stood inspection, attended a drill class, eaten breakfast and are on their way to morning muster. For the enlisted "regulars," the routine is reminiscent of boot camp training. But, for the reservists, it's a whole new world.

The reservists are civilians enlisted into the Navy for the sole purpose of going to the prep school. If, for any reason, they don't make it through the school, or aren't accepted at the Naval Academy, they are given the option of finishing their enlistment or returning to civilian life. This arrangement has


NAPS

Ron Miller, a NAPS calculus instructor, enjoys a light moment with the class. Though the curriculum is demanding, there's still some levity.



earned them the nickname of "invitees" from the other students.

"But you have to admire them," stated one fleet type. "It's hard enough to keep up with the school work. Learning this military stuff at the same time makes it rough."

"One of the hardest parts for me," said Andrew Swoope, a reservist from Chicago, "was accepting the idea of having someone tell me to get out of my bunk while it was still dark out so I could make sure my bunk was made up and my shoes were shined. I can see now that it's all a part of developing discipline.

"But those first few weeks, it didn't make any sense to me. A lot of the 'invitees' thought about dropping out then, but it only strengthened my resolve to see this through."

A student can expect to be enrolled in two mathematics classes, one or two English classes and one science class per day. The level of instruction is determined by a battery of tests given upon the student's arrival. "The classes are paced to the individual's needs," explained CDR Schmidt. "If a student is deficient in mathematics, for example, or if his reading ability isn't what it should be, we can compensate for that. We concentrate and focus on that need."

The curriculum—taught by both civilian and active duty military instructors—includes algebra, physics, chemistry, trigonometry, linear algebra, functions, composition, rhetoric, reading and vocabulary drill. "The Academy works closely with BuPers to ensure we get quality instructors," said Mr. W. F. Nolan, academics director for the school. "The classwork schedule here is so concentrated that the instructor has to care and be willing to give that extra effort. It's that attitude we look for in our instructors."

Lieutenant Jay Parker has taught trigonometry at NAPS for the past three years. He has a degree in physics and is working on a master's in education. "I think it's the students' motivation that impresses me most. I've taught in civilian schools and you don't see much of that. Here, they know they need to learn this stuff—their future depends upon it. Another thing that distinguishes them from their civilian peers is the self-discipline they've developed through the military and physical training."

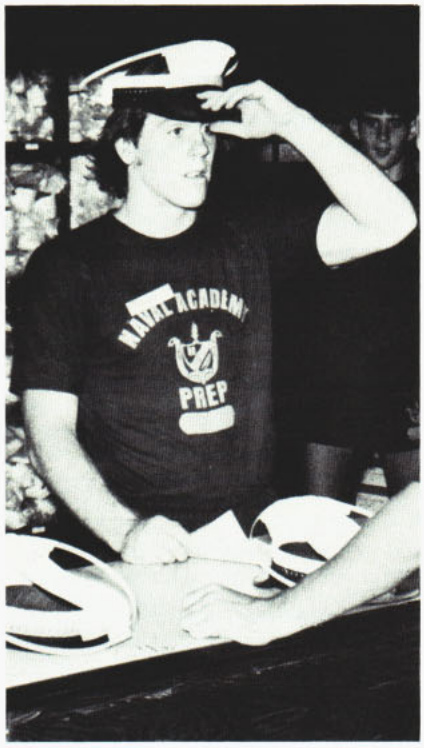
Following the Academy's concept that an informed mind is not all that is necessary to make a successful naval leader, the prep school places a great deal of emphasis on athletics.

Each "NAPSter" is required to take part in some type of sports program. "We offer everything from basketball to water polo, so there's something here for everybody," said Mr. Art Markos, the athletic director. "We give the students physical fitness tests regularly to determine if any remedial training is necessary. We want them to be in top physical condition by the time they reach the Academy."

The physical training was the only aspect of the school's syllabus changed when the women arrived last year. The same ruling allowing women to enter service academies

Physical fitness and conditioning are not overlooked at NAPS. Here the prep students compete against a local team.

A newly arrived student tries on a combination cap—it'll fit much better later.



opened the doors to NAPS for females. Women midshipmen candidates are still required to participate in sports, but are prohibited from contact sports such as football, lacrosse, or wrestling. They can, however, act as managers for these teams.

There are nine women enrolled in the current class—four regular Navy, two reservists and three Marines. Kathy Washington was a seaman in the Boost program when the Academy was opened to women.

"I decided that if I'm going to

be an officer, I might as well go first class, all the way. I expected an attitude problem with the guys here, but it never materialized. All it took was for the men to get used to us being around and accept it."

Attending the prep school is no guarantee that a student will receive an appointment to the Academy. They must first receive a nomination for appointment from one or more of several sources. Based on figures of past classes, 65 per cent, or about 180 students in this class will receive appointments. Of that 180, 61 per cent of them will complete the four years and become officers.

This figure compares favorably with the completion rate of the other Academy students. "The purpose of the prep school is to bring these students up to the standards needed to enter the Academy," a spokesman for the Naval Academy said. "This percentage proves the school is successful."

As one instructor described NAPS: "Getting into the Academy is like opening a door into a whole new future. For enlisted people NAPS just oils the hinges on that door." ⚓

So... You want

Interested in going to Annapolis? You must first meet basic eligibility requirements: be at least 17 years of age and not past your 22nd birthday on 1 July of the year you could enter the Academy; be unmarried and have no children; and be a U.S. citizen of good moral character.

So far so good. The next step is to get a nomination for appointment to the Academy. As a serviceman or woman, you have several sources of potential nominations, each of which should be pursued. The more nominations you receive, the better your chances for appointment. For instance, the Vice President is allowed five people attending the school at a time, but nominates 10 per vacancy. That means you could be competing against 49 other people for one of those slots—that is, if you get nominated at all.

If they've been out of school for a while or if their high school curriculum didn't include some of the recommended courses (three, preferably four years of math, including geometry, trigonometry and advanced algebra; four years of

PCO DD985(AR) IYGITRYGTBCO in your orders means " Prospective Commanding Officer DD–985 (Assembly Required) If you get it together right, you get to be Commanding Officer."

Cartoon by YNCM Gerald Mack Avera, USN.

to go to the Academy

English; two years of a modern foreign language; one year of physics; and one year of chemistry), Fleet personnel usually attend the Naval Academy Preparatory School, Newport, R. I., to increase their chances of receiving nomination and subsequent appointment. Check with your education office to ensure you meet prerequisites and apply through your commanding officer.

Here's a rundown on nomination sources available:

U.S. senators and representatives, the Delegate from the District of Columbia and the Resident Commissioner of Puerto Rico all have five midshipmen attending the Academy at any one time. It is not necessary to know the official personally. Apply directly to your representative and to both of your senators.

Children of career members of the Armed Forces are eligible to compete for 100 Presidential appointments each year. Write to the Candidate Guidance Office at the Academy.

You can also apply for a Vice Presidential nomination. Apply to Office of the Vice President, Washington, D. C. 20501, before 1 September.

If you are a resident of Puerto Rico, Canal Zone, American Samoa, Guam or the Virgin Islands, your governor or delegate, as the case may be, can nominate you for appointment. Write to the appropriate official.

There are 85 appointments open to regular Navy and Marine Corps personnel. Apply initially through your commanding officer.

Reservists can compete for the 85 slots allotted to them by also applying through their commanding officers.

Children of armed forces members killed in action, or who died or have 100 per cent disability from wounds, injuries or disease received while on active duty are eligible, as are the children of service men or women, or civilians listed as prisoners of war or missing in action. Apply to the Academy.

There is an unlimited quota for children of Medal of Honor winners; the Naval Academy will accept these applications.

Sample letters for requesting nominations and other information are included in the Naval Academy catalog, which you can get by writing to Director, Candidate Guidance, U.S. Naval Academy, Annapolis, Md. 21402. You can also check with your education office, career counselor or the OpNav Instruction 1531 series for additional information. ⚓

Grains of Salt

Fixing the Speed of Light

BY LTJG BRUCE R. LIVELY

Fellow midshipmen nicknamed him "Sheeny Mike," and under that name he captured the welterweight boxing championship of the Naval Academy. Admiral John L. Worden—of *Monitor* fame—lectured him: if he wanted to be of real service to America he should give less attention to science and more to Naval gunnery. Yet this native German was to earn a faculty seat at the academy, fix the speed of light and lay the groundwork for Einstein's Theory of Relativity. In so doing, he became the first American to win the Nobel Peace Prize.

His name was Albert A. Michelson, and his story is one of the most notable in U.S. naval history.

Michelson was born near the Polish hamlet of Strelno in December 1852. He was just two years old when his family joined the swell of immigrants to America. His parents followed the fortune-seekers to Virginia City in Nevada Territory where his father opened a store.

In 1869, he took the examination for entry to the Naval Academy but the appointment went to another who tied Michelson's score.

Undaunted, Michelson set off for Washington to see President Ulysses S. Grant, hoping to become one of 10 presidential appointees. Grant was cordial, but his 10 appointments-at-large were already made.

Michelson then waited three days at Annapolis to see the Academy Commandant. When he gained an interview the news was bad—still no vacancies. Returning to Washington he boarded a westbound train and learned from a presidential messenger, just before departure, that Grant had approved the 11th appointment—Michelson.

The post-Civil War Naval Academy was torn between the old sailing Navy and a new emphasis on "high science," technology, and humanities. Michelson's scientific bent, and a corresponding weakness in more traditional skills, determined his fate at Annapolis. He led his class in optics and drawing, placed second in heat and climatology, and shone in boxing and fencing. Yet he finished fifth to last in seamanship and its practice. Overall, he ranked ninth in the order of merit or class placement.

Portrait by Cliff Young shows Ensign Michelson at work on his experiment for determining the speed of light.

Despite the gibes of veteran officers that his scientific fantasies were inappropriate for a line officer, Albert profited from his stay at the Academy. After graduation he suspended scientific studies during his two-year training cruises. He served in five ships on this tour—USS *Monongahalea, Minnesota, Roanoke, Colorado,* and *Worcester*. After his promotion in 1875 to the rank of ensign, Michelson joined the Academy staff as a temporary instructor.

Michelson made a discovery while at the Academy that ensured his international reputation as a physicist. His department head, LCDR William T. Simpson, suggested that he experiment with the voguish new lecture-demonstration method to conduct a section on the speed of light. Albert scrounged some equipment from Navy surplus, but he had to invest $10 of his own money for one critical mirror. With this and the cast-off materials, he measured this most important constant of nature more accurately than any previous scientist had. He was promoted in 1879 to the rank of Master (today's lieutenant junior grade), and given astonishing freedom to publish his theories. A May issue of *The New York Times* described the young prodigy as "a new and brilliant name" destined to adorn "the scientific world of America."

Despite the cooperation of the Academy, Michelson knew that a successful naval career required a variety

of assignments. Critical tours at sea and in command hardly interested him. Instead he requested a year's leave of absence to attend graduate school in France.

In Europe, Michelson won a grant from Alexander Graham Bell and designed the apparatus which was to inspire Einstein's later research into the idea of relativity. About the same time, Michelson invented the interferometer to measure submicroscopic distances. Scientists later used a variation of Michelson's instrument to measure the diameter of distant stars. (In 1913 Michelson was to employ a modified interferometer for his milestone experiments on the elasticity of the earth.)

Michelson accepted a professorship at Case School of Applied Science in Cleveland, Ohio, in 1881, and resigned his commission in April 1882. During the ensuing years he also taught at Clark University in Worcester, Mass., and at the University of Chicago. During this time he devoted himself almost completely to research, becoming immersed in experiments by day and entertaining himself by night at billiards, his violin and easel.

Prizes held little enchantment for Michelson. Yet he won nearly every honor given for scientific attainment. The Nobel Prize has been called the world's most prestigious award. Michelson's main concern upon winning it was how to use the $40,000 stipend in his research.

Michelson refused to interrupt meaningful research to meet the mundane requirements of graduate degrees. The Naval Academy wasn't authorized to grant a bachelor of science degree until shortly after his death. Despite the lack of an "earned degree," many universities, both foreign and domestic, granted Michelson honorary degrees.

When the U.S. entered World War I, he was commissioned a lieutenant commander in the Naval Coastal Defense, and he transferred his entire research operation from Chicago to Washington. He devoted considerable time to developing new devices for naval use. Among these were his special binoculars which made it possible for American captains to detect enemy submarines at night, and his rangefinder which became standard naval equipment.

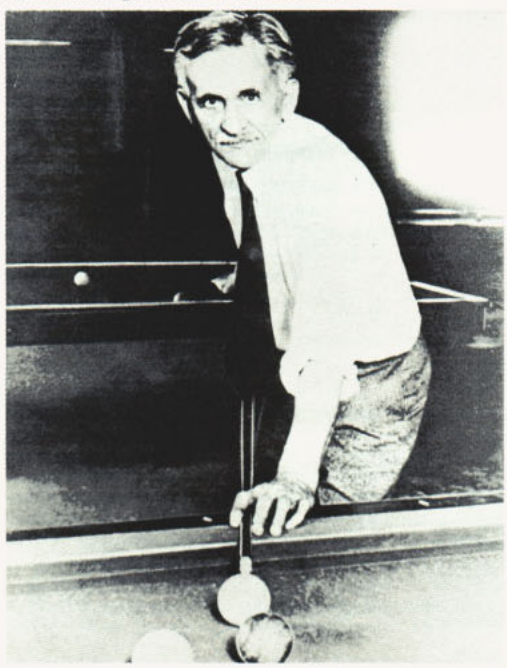
Returning to the Navy after 35 years was enjoyable, but the pesky intricacies of military discipline still baffled the 66-year-old scientist. On his first morning, the officer of the day greeted him with a stern, "Michelson, you're out of uniform. You should have a star on your cuff." Albert trekked to the tailor to get a star, and the next day a different officer reprimanded him for wearing it. Off came the line star, only to have the cycle repeat itself. Finally, Albert's wife advised that he invent a snapper star as the standard uniform for every bewildered officer who wanted to please all his superiors.

It gratified Michelson to aid in the war effort, but by 1919 he longed for his old laboratory. He was released from active duty on May 13 as a commander by Franklin D. Roosevelt, then Assistant Secretary of the Navy.

Five years later, Michelson accepted an invitation to speak at the Naval Academy. Before the lecture he took time to tour the expanding campus. But he recognized few landmarks. The old seawall where he had made the first experiments on the speed of light had been filled. Today, a modern science facility, Michelson Hall, occupies that site.

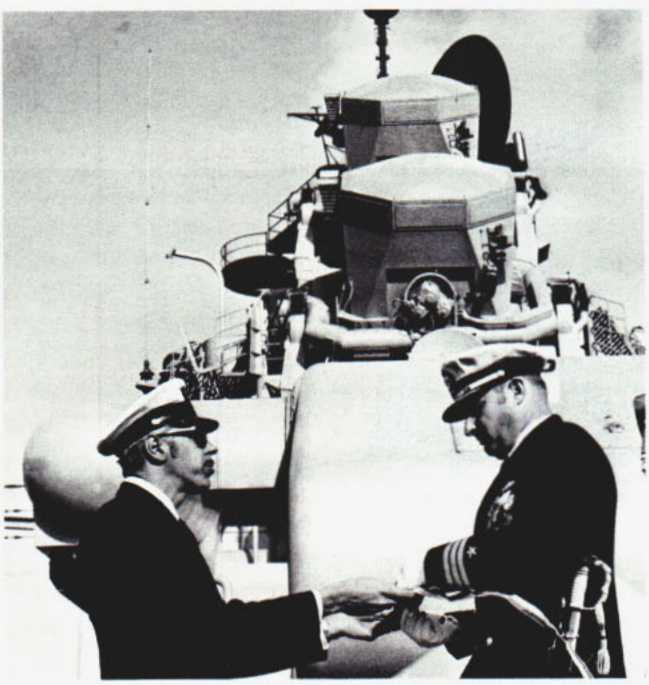
Michelson's death in May 1931 signaled the end of an era. The world of science had passed a milestone. The nation and its Navy had lost an uncanny genius and a devoted friend—"The Peerless Physicist of Annapolis." ⚓

A favorite pastime was billiards.



R282104Z AUG 76
FROM: CNO WASHINGTON DC
TO: CINCLANTFLT NORFOLK VA
INFO: COMNAVSEASYSCOM WASHINGTON DC
USS LITTLEROCK (CG 4)
UNCLAS EFTO //N04700//
STRIKE OF USS LITTLE ROCK (CG 4)
A. SECOND ENDORSEMENT TO PREINSURV LTR SER C1018 OF 18 AUG 1976.
B. CNO WASHINGTON DC 131517Z AUG 76
1. BY REF A. SECNAV AUTHORIZED THAT USS LITTLE ROCK (CG 4) BE STRICKEN FROM THE NAVAL VESSEL REGISTER ON 22 NOV 1976. REF B. APPROVED PHILADELPHIA AS THE DECOMMISSIONING SITE.
2. ACCORDINGLY, DECOMMISSION AND STRIKE USS LITTLE ROCK (CG 4) ON 22 NOV 1976.....

YOU KNOW IT'S THE END



By JO1 JERRY ATCHISON

Buried among the many messages that funneled through the message center of USS *Little Rock* on August 28 was an order that seemed to make all the others devoid of meaning.

The scuttlebutt became a reality; the conjectures were confirmed. It was the end for one of the best and most highly regarded ships in the U. S. Navy. The 31-year-old flagship of the Sixth Fleet had grown too old to operate effectively and too tired to be overhauled economically.

A ship that was built in Philadelphia, transferred to the mothball fleet from Philadelphia and later put back into commission at Philadelphia, was returning to Philadelphia for the last time.

Throughout the Mediterranean, *Little Rock* carried the United States flag in times of peace and conflict. Those concerned with international diplomacy and politics called her a "high-profile ship." To her crew, she was home—a home they were soon to lose.

"It was a difficult time for the crew," said Commander R. R. Denis, ship's executive officer. "Difficult

OF A SHIP WHEN. . .

. . . 'You can't even get a good cup of coffee here'

because of the speed with which decisions were made and because we were forward deployed. 'Where are people going to go?' 'What's going to happen to me—my family?' Those are hard questions to answer in the middle of the Med. We knew we had to find answers—and fast."

Denis reviewed the events leading up to the decommissioning as the ship stood at pierside in Philadelphia awaiting the stripping of the last of her equipment.

"The entire 1,000-man crew had to be transferred to further duty in just a few short weeks," he said. "That was a big job, particularly when you consider that every guy's transfer is important to him."

Screening of the crew was the first order of business for *Little Rock*, even before she left the Med. Career counselors, personnelmen and all others tasked

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Editor's Note:
Since this story was written, stripping of Little Rock has ceased pending her possible disposal as a naval memorial at a location still to be determined.

with ensuring the orderly transfer of the crew suddenly found themselves on an around-the-clock schedule. Information from the Bureau of Naval Personnel began to arrive on board and was passed to crewmembers.

The age-old task of matching individual wishes with the needs of the service began on *Little Rock*—before it ended the entire crew, including more than 500 in a one-week period, were scheduled for transfer.

For one *Little Rock* sailor activities at the Philadelphia Naval Base seemed oddly reminiscent. Gunner's Mate First Class Frank E. Bowen had been here before, 16 years earlier, as part of the precommissioning detail when the ship was pulled from mothballs and refurbished for fleet duty. Now he was once again in Philadelphia as part of *Little Rock's* decommissioning crew after various other assignments in between.

On the day *Little Rock* was to be decommissioned, GMM1 Bowen would enter the Fleet Reserve.

"I sailed in her for many years," he said. "I guess you could say they're going to decommission the both of us."

In the last weeks before her decommissioning, as she sat pierside, *Little Rock* showed few outward signs of her impending demise. To the casual observer, she might have appeared to be in port for a few days of liberty and upkeep. But a closer inspection would have revealed telltale hints.

She had been stripped of at least one item essential to any seagoing vessel—her life rafts.

On the main deck, a sailor could be seen ripping up the cruiser's revered teakwood deck—one of the last to be found on a major combatant. The man involved in the deck work considered the irony of his labor—ripping up planks which he, and hundreds of others before him once swabbed and holystoned and swabbed again for endless hours.

"Each man is going to get a section of this when he leaves the ship," he said. "It's going to be a good reminder of the time we spent aboard, particularly the time we spent scrubbing these decks."

Below decks, there were also subtle indicators that this was no normal upkeep period. Hundreds of small tags hung from equipment of every sort—communications gear, damage control items, scuttlebutts. Although her hull was destined for scrap, much of *Little Rock's* on-board equipment was destined for use in other Navy ships, from tugs to aircraft carriers.

In the crew's compartment, a work party cut away piping that supported old canvas bunks, passing the frames through the hatch, up to the main deck. In another work area a sailor looked with surprise at the amount of space in what had previously been a crammed machine shop packed to the overhead with equipment. "I could rollerskate in here," he said.

The conversation aboard *Little Rock* also hinted at her fate. "I'm leaving in a couple of days and I've

Walking away from the ship he recommissioned in 1960 and decommissioned in 1976 is BMCM Thomas Santella.

A Busy Ship-Right to the End

During her final deployment, *Little Rock* was a busy ship.

She served as flagship for three consecutive Sixth Fleet commanders. She became the first U. S. warship to visit Alexandria, Egypt, since World War II and she was the only foreign warship to take part in the reopening ceremonies of the Suez Canal.

Little Rock played a key role in rescuing flood victims from Tunisia in 1973, directed U. S. Navy humanitarian evacuations of noncombatants from Cyprus in 1974, and took part in the two Lebanon operations of 1976.

got to get my plane tickets." or "My wife just phoned, the household goods are all packed." or "Listen, I don't have your address, just a second while I get a pencil and paper."

Then the day came—a handful of crewmembers and a small number of guests huddled on the fantail of the ship. A freezing wind whipped across the deck and commercial jets screamed obliviously overhead, on final approach to Philadelphia International Airport.

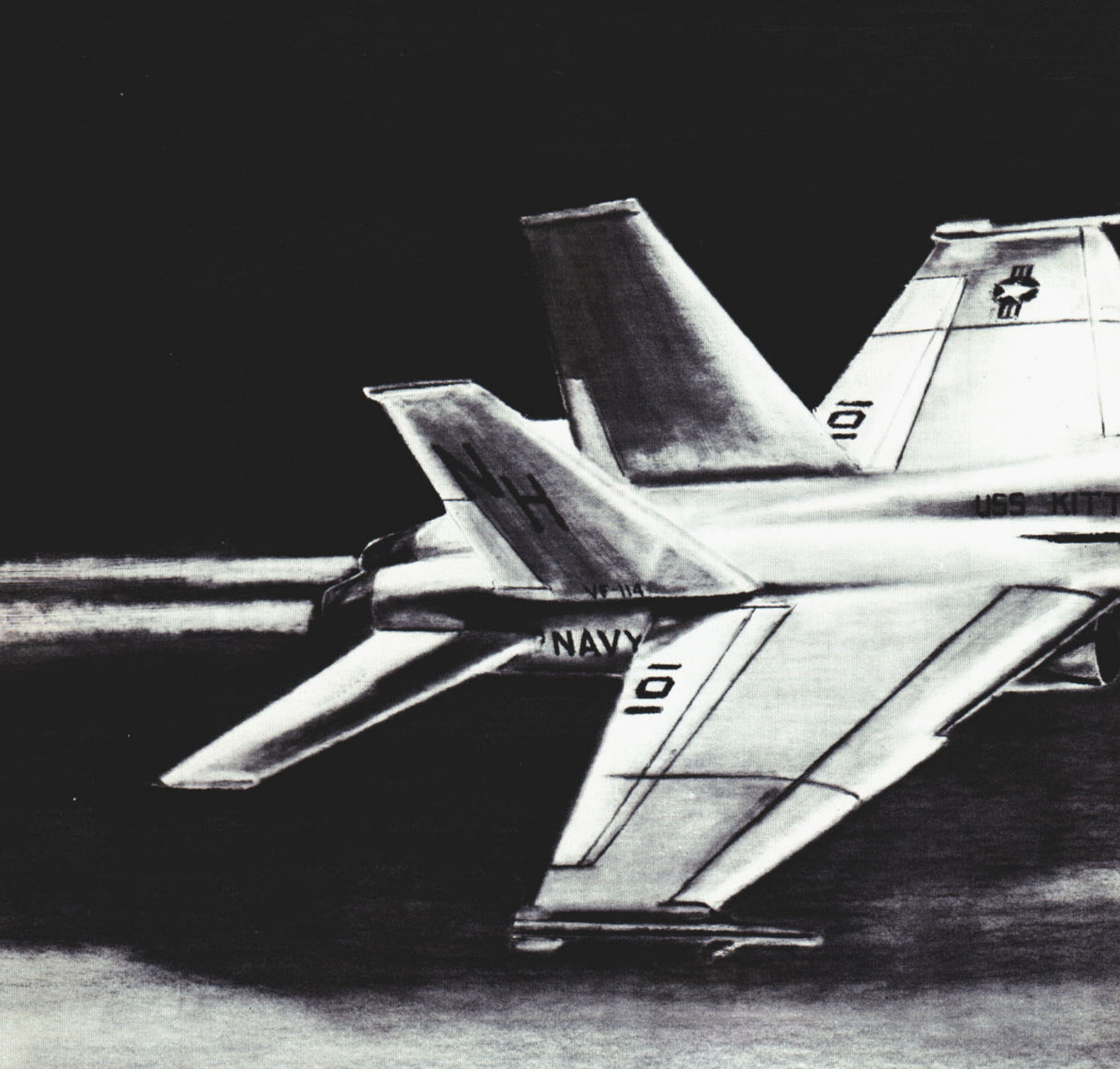
Rear Admiral Wycliffe B. Toole, Commandant 4th Naval District, directed his remarks not at the ship but at the remaining crew of *Little Rock* standing behind the guests.

"Thirty years ago I saw my first ship decommissioning. At the end of World War II we had 8,000 or so ships and one more or less didn't matter."

Commander Kent R. Siegel, *Little Rock's* last commanding officer, summed it all up. "The ceremony is really anticlimactic. You can't even get a good cup of coffee here and that certainly spells the end of a Navy ship." ⚓

Guests at Little Rock's decommissioning ceremony bow their heads during the benediction.

Little Rock's crew goes ashore for the last time.



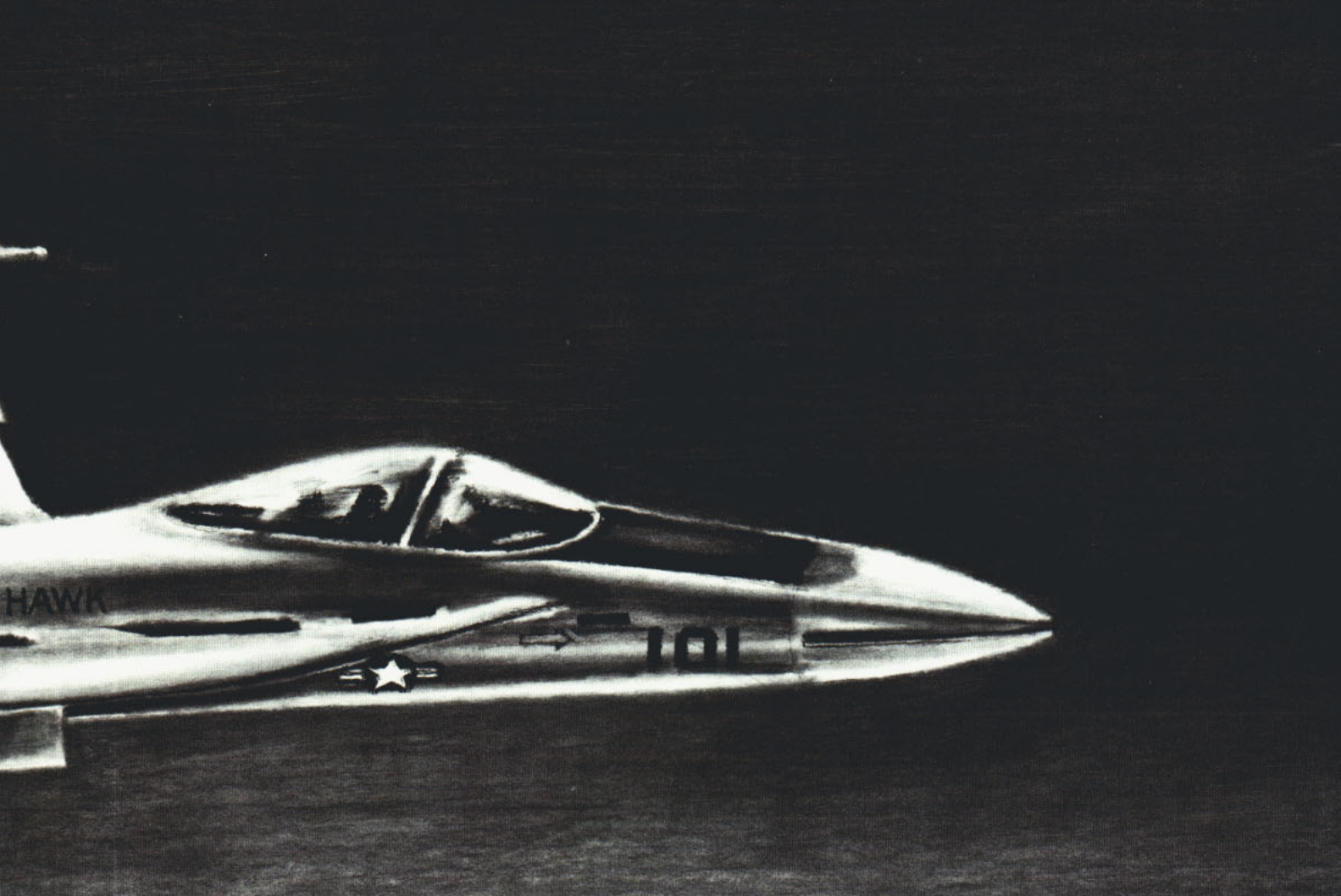
"Naval warfare can be best described as armed conflict between military forces in which the components of at least one adversary are sea based. It has generally been considered as being constituted of two basic functions: Sea Control and Power Projection."

Admiral James L. Holloway III
Chief of Naval Operations

Sea control and projection are missions as distinct from each other as they are fundamental to United States naval strategy. The first involves defense of a sea area in which naval forces or shipping are tasked to operate. The second, projection, is the bottom line of seapower—the ability to attack a land area from the sea.

Now the Navy is developing a plane that will be able to do both. It's called the F-18, and is expected to eventually replace the aging F-4s and A-7s now operating in the fleet. Though not considered as sophisticated as F-14 *Tomcats,* F-18s will complement *Tomcats* in providing maritime air superiority.

The fighter version will contain equipment and armament designed primarily for shooting down enemy aircraft; the attack version will be capable of attacks on surface targets. Even allowing for differ-



F-18 air power for the eighties

ences in missions, the two F-18 designs (fighter and attack) will be practically identical. Both will be about the size of the F-8 which is 56 feet long with a 40.7-foot wingspan.

The $5.8 million F-18 fighter will weigh 33,583 pounds including 10,860 pounds of fuel, and can be catapulted from a carrier deck fully loaded. This version will be armed with a 20-mm, M-61 internal gun; two *Sparrow* missiles positioned on the lower corners of the fuselage; and two AIM-9 *Sidewinders* on each wingtip. Fully armed and carrying only an internal fuel load, the fighter will have a range of about 400 nautical miles.

The attack version will carry three 300-gallon auxiliary fuel tanks providing a total of 16,000 pounds of fuel, and have a range of about 550 nautical miles. It will carry two *Sidewinders*, a 20-mm internal gun, four M-83 bombs, forward-looking infrared radar and laser spot tracker pods. It will have a gross takeoff weight of 45,131 pounds.

In addition to its array of weaponry, the F-18's controls are designed to help simplify the pilot's complex air combat missions. A button on the control stick permits convenient selection of guns or

missiles. An onboard computer provides firing solutions automatically. Radar modes can be activated by a control on the throttle. The attack version features a moving map display on which electronics warfare data are superimposed.

The plane's fuel system has been designed to minimize serious combat damage. No tanks are located around the engines, and two of the internal tanks are independent and self-sealing to guarantee sufficient fuel for at least 300 nautical miles if combat damage should cut off the supply from other tanks.

Several other F-18 features will enhance its air combat effectiveness and conserve costs:

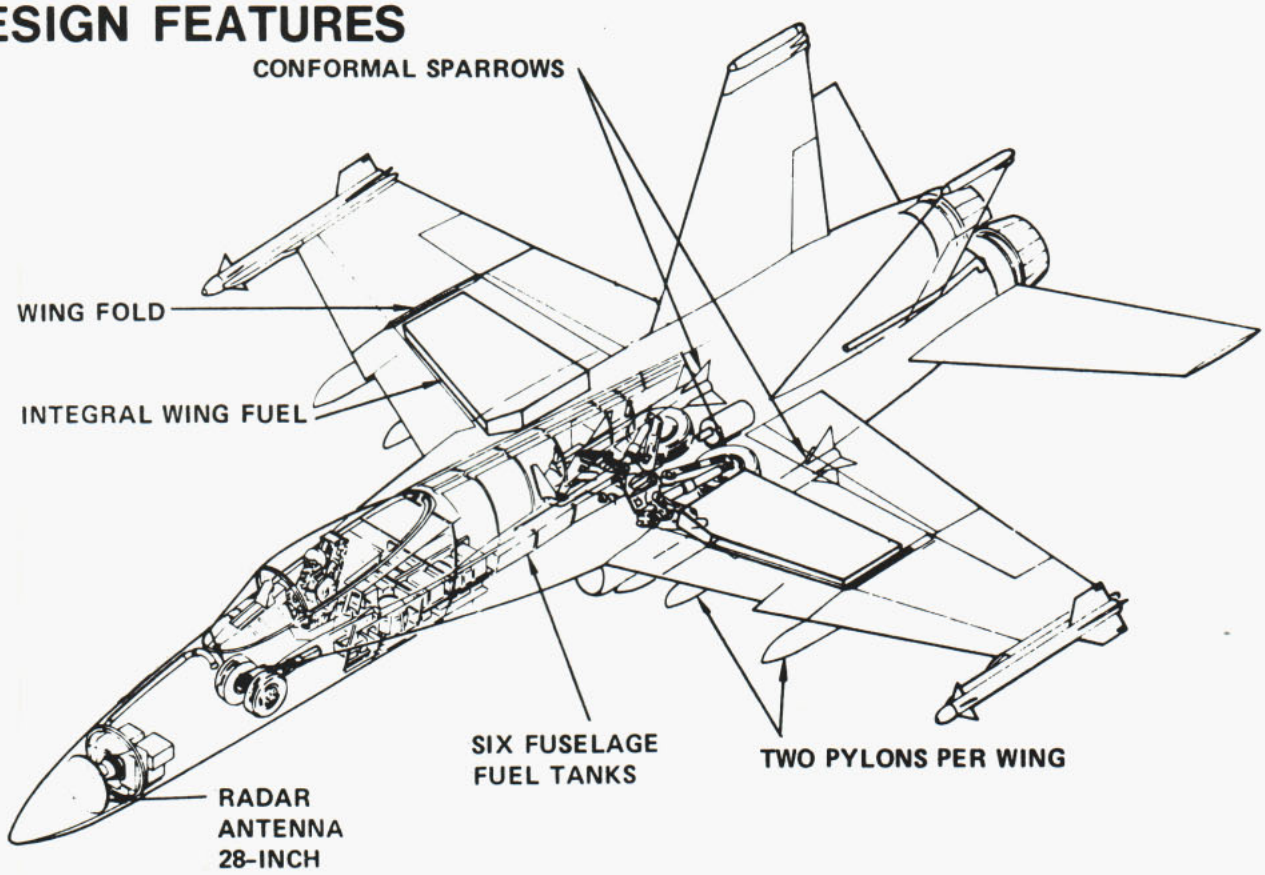
- The two 16,000-pound thrust turbofan engines powering both the fighter and attack versions are completely interchangeable. By eliminating the necessity for producing and stocking separate engines for the attack and fighter versions, or for the right and left side of each version, production and inventory costs are reduced.
- Each engine has an auxiliary drive system to drive the fuel pump, hydraulic pump, generator and air turbine starter. This system reduces the number of electrical connections to the engines and facilitates rapid powerplant replacement in case of damage.
- The F-18's auxiliary power unit, used to start the engines, can also supply power for a full ground checkout of all aircraft electrical systems without starting the engines.
- Some other ease-of-maintenance features include: radar mounted on tracks which enable it to be pulled directly out of the nose section; straight down removal of internal guns; a forward hinged windshield that provides easy access to instrumentation for making repairs; and caution warning lights that indicate failures in critical equipment.

Current production schedules call for the delivery of 11 F-18s to the Navy for testing beginning in August 1978. Delivery will be speeded up beginning in February 1980 as "bugs" are corrected in the first test aircraft.

By the mid-1980s, the Navy expects to have accepted 185 fighters and 345 attack aircraft. Delivery rates will be kept deliberately low during the early phases to ensure that costs of any major modifications are kept to a minimum.

If all proceeds as planned, the Navy expects F-18 squadrons to be permanently deployed on board aircraft carriers by fiscal year 1982. While the F-18 alone will not guarantee sea control and projection, it will be an integral part of the overall Navy team and a definite asset in maintaining superior naval forces in the free world. ⚓

DESIGN FEATURES



MCPON

Navy Women: A Continuing Story

MCPON Robert J. Walker

THE UTILIZATION of Navy women in 1942, was different from today. Then, Navy women were assigned only three ratings—yeoman, storekeeper, and radioman; the highest rank a woman could attain was lieutenant commander and there was only one opening at that level. Navy women could serve only within the United States. The personnel goal then was 1000 officers and 10,000 enlisteds.

The law that established those first women as a true part of the U. S. Navy was enacted in July 1942. The original proposed bill had intended to amend existing legislation and set up an emergency wartime organization called the Women's Auxiliary Reserve. The adopted proposal differed slightly in that it established a Women's Reserve as part of the Naval Reserve. Along with the lone lieutenant commander authorized, there were to be 35 lieutenants and no more than one-third of the total number of officers could be lieutenants junior grade.

This, of course, was not the first time women were associated with the Navy. The Navy Nurse Corps was established on May 13, 1908, when 20 women, since called the Sacred Twenty, were entered on the rolls.

During March 1917, the famous Yeoman (F) of World War I came into being. The Navy's civilian work force could not meet the clerical needs of naval shore stations. It was found that the act establishing the Naval Reserve Force did not specify any male only eligibility requirement. Therefore, women could be enlisted for the emergency to serve as yeomen, translators, draftsmen, fingerprint experts, camouflage designers and recruiting agents.

Unlike their World War II counterparts to come, the Navy's women of 1917-18 could and did serve overseas. But, back to World War II—by 1943, some 27,000 officers and enlisted women were serving in the Waves (a term not used in official Navy correspondence). More ratings were open too—gunnery and blind flying instruction, aerology, aviation ground crew work, navigation and communication. By the second anniversary, the number of Navy women rose to 72,-350. Provisions were being made for a woman to hold the rank of captain. By their third anniversary, approximately 86,000 women were serving in the Navy.

Women became an integral part of the peacetime Navy when the President signed the Women's Armed Services Integration Act on June 12, 1948. Today, in the absence of the draft, the Navy endeavors to make maximum use of volunteer personnel resources. Women are at the heart of such resources.

By making use now of the talent and expertise we have on board, we will continue to attract qualified women to remain as members of the Navy team. But, to maintain progress in opportunity for women, we must seek out every possible approach to better management of our Navy women. Maintaining this progress means that we must try to close the gap between what Navy policy allows and what is actually practiced in the daily working situation.

At present, it is primarily in the area of attitudes that progress needs to be made, that is, women should be knowledgeable about their function in the Navy and set realistic goals, and males in supervisory positions should review their attitude concerning the role of women in the Navy.

Over the last century, changes have occurred in the employment and role of women in all areas of American society. The Navy must grow and change also. For our women to progress professionally, they must be given leadership and professional opportunities.

The Navy will continue to assign women across the entire spectrum of available jobs. However, only enlightened attitudes can assure the acceptance of Navy women.

How successful the Navy will be in realizing its goals of equal opportunity toward women actually depends on how well our attitudes keep pace with the modern Navy. ⚓

Bearings

Gato Does it in 40

When Ferdinand Magellan navigated the strait now named for him, it took five and one-half weeks. That was in 1520. Now, 456 years later, USS *Gato* (SSN 615) made the same trip in 40 hours and became the first nuclear-powered submarine to transit the strait at the southern tip of South America.

Touching the foot of the Patagonian Indian at Magellan's Monument in Punta Arenas, Chile, is supposed to bring you good luck.

Gato and three surface ships were involved in Unitas XVII, a series of naval exercises involving the U.S. Navy and the major navies of South America, when she sailed the strait. During the passage, *Gato* made a two-day port call at Punta Arenas, Chile, which is the southernmost city in the world.

Gato completed the deployment by passing through the Panama Canal and claiming another record —that of the first nuclear submarine to circumnavigate the South American continent.

Yard Goes to the Top

The Washington Navy Yard, oldest shore installation in the Navy, has been designated a National Historical Landmark by the Interior Department. The yard was established by President John Adams in 1799. The Latrobe Gate, main entrance to the yard, has a tale all its own — only the President of the United States can enter the gate head on from 8th St. leading directly to it. All others must make a right turn into the gate from M St. Seems President Lincoln set the tradition during the Civil War—he had a habit of barreling through the gate in his carriage, heedless of traffic flow or the directions of sentries at the gate.

Swinging With Gridley

More than eight years ago, a small town in New York was besieged by thousands of young people and became the legendary musical event of the decade. It was called Woodstock — three rain-drenched days of people enjoying people who made music.

In October, this same bond of friendship again emerged through the medium of music. It rained but the people kept dry and there was music, although it lasted only four hours. It was called the Japanese/American Rock n' Blues Concert and took place in Yokosuka.

The men of USS *Gridley* (CG 21), operating in the western Pacific with the Seventh Fleet, arranged the concert as a "people-to-people" project while in the Japanese port. They invited two rock and blues bands from Tokyo to come down to jam with musicians from *Gridley*. The bands came and so did the rain.

The concert, scheduled to be held on a pier, didn't turn into another wet Woodstock though. USS *Midway* (CV 41) came to the rescue by offering a hangar deck as a refuge for the musicians and their audience of more than 1000.

Listeners found that, regardless of cultural differences, music can become the common denominator bringing people together—as it did at Woodstock.

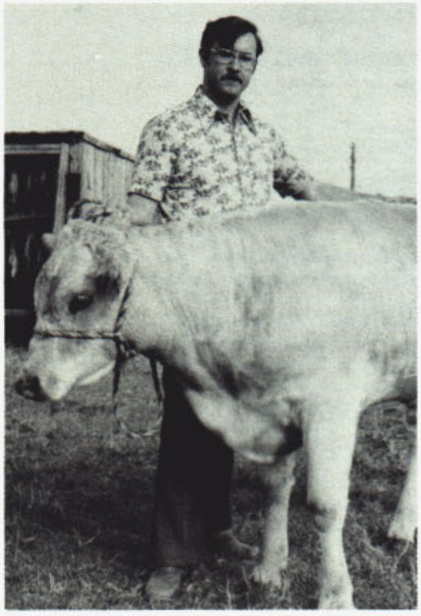
Raising Beefalo $ $

Sailors have sometimes been known for their unique off-duty hobbies. Chief Radioman Earl Maggard has one that is—to say the least—different. He raises Beefalo.

"Yes, Beefalo," says the Patuxent

River-based Navyman. "It's only a matter of time before Beefalo replaces Angus and Hereford just as those two breeds replaced the Longhorn. The Beefalo, 3/8 buffalo and 5/8 domestic breed, usually Hereford or Charlois, is already popular on the West Coast and it's gaining in popularity elsewhere."

Ranchers tried for years to crossbreed the range-hardy buffalo with



domestic cattle and failed. Even the Canadian and Russian governments experimented for decades with no success. They found that although a buffalo was willing to mate with a domestic cow, continued crossbreeding was impossible because the offspring were usually sterile.

Then a Californian developed the first Beefalo bull that wasn't sterile, built a herd and made a fortune by selling one bull for $2.5 million.

As for Chief Maggard, his Beefalo roam at a friend's farm near Patuxent River where he pays their rent by working as a farmhand.

Display Is NATO Epic

It was a scene that would have made a movie director envious—warships and merchantmen of every size steaming in formation through the blue waters of the western Mediterranean, air strikes in support of ground troops, convoy operations and Marines wading ashore from landing craft amid the noise and smoke of battle.

What looked like the beginning of another Hollywood war epic was actually one of the largest afloat NATO exercises in recent years.

The guided Missile cruiser USS Albany (CG 10) in the western Mediterranean during "Display Determination."

Forty-eight U.S. and Allied Navy and merchant ships gathered in the Mediterranean last September and October for "Display Determination." The exercise was one of the "Autumn Forge" series conducted throughout Europe last fall.

The naval force included three separate carrier task forces and a merchant convoy. USS *Nimitz* (CVN 68), USS *America* (CV 60) and HMS *Ark Royal* (RO 9) task forces, including a battalion of U.S. Marines and units from Portugal, Italy and Turkey, combined at-sea training operations with command and control techniques to ensure that NATO operational plans remain current with today's modern fleet operating procedures. ⚓

'76 We Continue

One year, 12 months or 365 days—no matter how you count, the fact is 1976 was quite a year for the Navy and the nation. It was the United States' Bicentennial and, of course, the Navy's Bicentennial-plus-one. But, as you'll see by the following review, it was also a time of much activity and many milestones.

JANUARY

5— TIME Magazine names Lieutenant Commander Kathleen Byerly, Flag Secretary and aide to COMTRAPAC, as one of 12 "Women of the Year—1975."
14— Two Navymen join the 1976 Olympic Bobsled Team: GMG2 Frederick Fritsch, UDT 21, and RM2 William Renton, Seal Team Two.
19— CNO testifies on fleet readiness before a House Armed Services subcommittee and establishes fleet readiness as the Navy's primary objective.

21— The President submits record $112.7 billion FY77 defense budget to Congress which contains $37.4 billion for Navy programs including $6.3 billion for 16 new ships.

FEBRUARY

13— Captain Fran McKee becomes first woman line officer appointed to rear admiral.
18— New ship material readiness course for senior officers is established as part of a Navy effort to emphasize technological education for officers.
23— Three Navy ships transport men and equipment of an Army engineering task force to Guatemala to assist in earthquake relief.
26— RADM James B. Stockdale, Commander, ASW Wing Pacific, and LT Thomas R. Norris, USNR (Ret), receive Medal of Honor from President Ford for heroic

to Make History

actions during American involvement in Vietnam.

MARCH

2— New procedures for notifying enlisted personnel of advancement go into effect. Each of the E-4 through E-6 exam cycles is split into two segments.
14— Two Navy satellites, SOLRAD I and II, are launched at Cape Canaveral to observe solar conditions and forecast atmospheric disturbances.
24— New agreement signed by SECNAV and Secretary of Labor enables Navy enlisted personnel to gain apprenticeship certification for training and experience received on active duty.

APRIL

6— Women officers allowed to enter all restricted

line communities via initial commissioning programs or lateral transfers.
8— Navy's experimental 100-ton surface effect ship (SES) launches medium-range SM-2 missile while moving at 60 knots off Florida.
10— Keel-laying ceremony held for the first Trident submarine *Ohio* (SSBN 726) at Groton, Conn.

MAY

8— Medal commemorating the Navy's Bicentennial was released.
14— Naval Officer Candidate School, Newport, R. I., notes 25th anniversary.
15— Pulitzer Prize winning naval historian, RADM Samuel Eliot Morison dies in Boston at age 88.
19— First three Navy enlisted women are graduated from Naval Academy Prep School, Newport, R. I.

'76 We Continue to Make History

21— Navy authorized to design, construct and test prototype 3,000-ton surface effect ship.

26— Six Seventh Fleet ships, Seabees and Marine Corps personnel arrive in Guam to assist in Typhoon Pamela relief efforts.

29— USS *Tarawa* (LHA 1), first in a new class of amphibious assault ships, is commissioned in Pascagoula, Miss.

JUNE

1— DOD announces voluntary "do-it-yourself" moving program, providing cash bonuses to people who move their own household goods within CONUS.

5— Four women officers are selected for transfer to the Restricted Line—first time in Navy history.

16— Aerobics program is approved by CNO for all Navy personnel.

17— A new weight control program applies aviation weight standards to all Navy personnel.

17— USS *Constitution* "puts to sea" for two-hour turnaround cruise with representatives of 33 nations and SECNAV embarked.

20— USS *Spiegel Grove* (LSD 32) evacuates 276 U. S. and foreign nationals from war-torn Beirut in Lebanon.

21— Senate ratifies five-year treaty with Spain giving U. S. continued use of Rota Naval Base.

30— Surface effect ship (SES 100B) sets speed record of 103 mph (89.5 knots).

JULY

1— SECNAV creates a special independent three-member board to speed up efforts to settle outstanding shipbuilding claims.

4— Navy men and women around the world celebrate nation's Bicentennial; International Naval Review and Operation Sail held in New York.

6— First women enter Naval Academy as members of class of 1980.

16— Navy selects "Sailors of the Year" for FY76:

HT1 Ararat Krikorian, HT1 Randolph R. McClary and MA1 Thomas C. Wallace.

27— Landing craft USS *Portland* (LSD 37) evacuates 300 Americans and other nationals from Beirut, Lebanon.

AUGUST

16— Navy dependents become eligible for emergency space-available travel on Military Airlift Command aircraft.

20— USS *Ainsworth* (FF 1080) first ship to receive production version of *Harpoon* missile launch system.

21— First E-5/E-6 Petty Officer Quality Review Board reports to CNO.

28— Soviet *Echo II*-class submarine collides with USS *Voge* (FF 1047) in Ionian Sea.

SEPTEMBER

1— USS *Sylvania* (AFS 2) arrives in Norfolk carrying treasures from tomb of Egypt's King Tutankhamen on 30-month loan to U. S.

10— Vice Admiral Samuel L. Gravely, Jr., first black to achieve three-star rank, assumes command of Third Fleet.

14— USS *John F. Kennedy* (CV 67) and USS *Bordelon* (DD 881) collide during a night refueling operation 100 miles north of Scotland; seven *Bordelon* crewmen injured.

25— Oliver Hazard Perry (FFG 7), first of a new class of guided missile frigates, launched at Bath, Maine.

OCTOBER

1— Military personnel receive 4.83 per cent raise.

1— Proficiency flying terminated.

2— Admiral James L. Holloway III visits commands in Western Pacific.

4— Tax Reform Act makes withholding of state income taxes from military paychecks mandatory if states request such action.

7— Twelve naval districts reorganized; number of primary commandants reduced to four.

13— Washington Navy Yard, oldest shore installation in the Navy, designated a national historic landmark.

20— New Jewish worship pennant displayed for the first time, aboard USS *Guam* (LPH 9).

NOVEMBER

11— F-14 *Tomcat* lost from USS *John F. Kennedy* (CV 67) during NATO exercise in September, recovered near Scotland.

13— USS *Los Angeles* (SSN 688), first of a new class of nuclear attack submarines, commissioned at Newport News, Va.

30— Six-week operational evaluation of submarine-launched version of the *Harpoon* missile begins aboard USS *Permit* (SSN 594).

DECEMBER

1— CNO orders Navy Uniform Board to look into feasibility of restoring the old-style uniform to the fleet. Admiral Holloway says that the Navy shouldn't "neglect the possibility of a reintroduction at some time, for some people, of that type of uniform."

7— The Navy's *Tomahawk* cruise missile successfully flies 188 miles and locates a target ship in the Pacific Ocean test range. The missile was launched on its 55-minute mission from an A-6 *Intruder*.

9— Navy announces selection of contractor for building 3,000-ton prototype SES. ⚓

Rights & Benefits

Survivor Protection

Before you finish this paragraph, two people in the United States will die. Before the day is done, two sailors will die. Like taxes, death is inevitable. For many, the grief is compounded by ignorance—ignorance about the protection that can and should be afforded to those left behind.

To a great extent, the military has resolved that problem by providing automatic survivor protection. Military survivor benefits cover a broad range of services and can translate into thousands of dollars for your dependents and loved ones.

If you were to die on active duty tomorrow, help would be immediately available to your family in the person of a Casualty Assistance Calls Officer (CACO) who would assist with such details as transportation, child care, funeral and burial arrangements and survivor benefits claims submissions. But personal assistance is only the tip of the iceberg.

In addition, your survivors can count on a broad range of payments and services including:

- Death Gratuity—This is a lump sum equal to six months' basic pay with a minimum of $800 and a maximum of $3000. This money is payable first to the spouse; if none, then to the member's children and, if none, to whomever has been designated on the Record of Emergency Data (NavPers 1070/602).
- Unpaid Pay and Allowances—This includes regular pay and allowances and per diem earned up to the time of death and is payable to a designated beneficiary.
- DIC—Dependency and Indemnity Compensation is authorized for unremarried widows and widowers of service members, retirees, or veterans who die of service-connected causes. Normally, in the absence of negligence, this means all deaths while on active duty. DIC is like a life annuity—payments continue on a monthly basis. Pay is according to grade (see table). A widow or widower is entitled to $43 per month extra for each child. DIC is not subject to tax or seizure by creditors of either the service member or the beneficiary, and this pay does not prevent an eligible widow or children from receiving death benefits from Social Security.
- Funeral Expenses—The Navy will pay up to $700 in funeral expenses. The family may also be eligible for funeral expenses from the Social Security Administration. All active duty and honorable discharged service members are entitled to a headstone and burial in a national cemetery of their choice, if space is available.
- Transportation—Dependents are eligible for government transportation from the place where the death notice was received to any place they designate. They also may ship their household goods from the last duty station or place of storage. Privately owned vehicles may be shipped if the death occurred overseas. And the Navy will pay up to six months' storage of household goods in connection with final shipment.

Dependency and Indemnity Compensation

Pay Grade	Monthly Rate	Pay Grade	Monthly Rate
E-1	$260	W-4	$372
E-2	268	O-1	328
E-3	275	O-2	340
E-4	292	O-3	364
E-5	300	O-4	384
E-6	307	O-5	423
E-7	322	O-6	476
E-8	340	O-7	516
E-9	355	O-8	565
W-1	328	O-9	607
W-2	341	O-10	664
W-3	352		

- Privileges—Unremarried widows and widowers can use commissaries and exchanges. They are entitled to health benefits in uniformed services medical activities where available, and to hospitalization and outpatient care from civilian sources on a cost-sharing basis. Legal aid is also possible.
- Clubs—Widows and widowers may use appropriate open messes when available.
- Preference—Unremarried widows and widowers have preference in federal employment, including an addition of points to the passing score in Civil Service competitive examinations and preference in appointments and reinstatements.
- Insurance—Families of participating service members receive up to $20,000 from the Servicemen's Group Life Insurance. Distribution is according to that listed by the member on the Serviceman's Group Life Insurance Election form (VA form 29-82-86).

• Dependents' Education—Many scholarships and loans are available to those who come looking, as is assistance from the Veterans Administration.

Because of the substantial value of these survivor benefits, planning and action on the part of the Navy sponsor is necessary. Perhaps the most important step is to make sure your Record of Emergency Data is up to date. This document, which is in each member's service record, indicates who is to receive some of your survivor benefits.

Another planning consideration arises as the Navy sponsor nears the end of his or her military service. Although much of the protection follows a member into retirement, the death gratuity will apply only when death is from a service-connected disability. DIC may be paid any time after the member's retirement, if the death was caused by a service-connected disability. Those about to retire may want to consider the Survivor Benefit Plan, a method for giving survivors part of the service member's monthly retirement check after his or her death. Otherwise, there is no pension after a retired sailor dies.

Those who enter the plan are able to provide an annuity for their spouses and/or children of up to 55 per cent of their retainer or retirement check. The cost is small each month and, under recent legislation, the amount withheld would cease if the intended survivor dies before the service member.

Survivors may be eligible for social security benefits, some of which may affect your pension earnings. Be sure to get specific information from your Career Counselor or other knowledgeable party.

These rights and death benefits have considerable value and provide the foundation for an estate. But they are not necessarily sufficient protection. Every service person should determine how much his or her dependents will need in the event of his or her untimely death and compare these needs with the actual available benefits.

Commercial life insurance and other investments may be necessary as an adjunct to military survivor protection.

Whatever your circumstances, you should make a point to discuss the matter of family survivor protection with your dependents. Even though the prospect of your death may not be the most pleasant of subjects, your family deserves to know what to expect. If you have maintained updated emergency data records, determined your family's needs and supplemented government survivor protection as necessary, you will have provided your loved ones a most valuable and necessary service.

To help you in getting the specific facts and figures you need in planning for your family, visit your local command Career Counselor. He can provide you with up-to-date information not only on Navy programs but also on Social Security and Veterans Administration programs as well. ⚓

Whatever happened to the ENERGY crunch?

BY JO2 DAVIDA MATTHEWS

"We aren't waiting in line for gas anymore but that doesn't mean we're out of the woods," said Commander R. D. Furiga, Director of the Navy Energy Office. "We are still in an energy crisis and something has to be done."

The energy crunch seems to have abated—for the moment. Left in its wake is a new awareness of our reliance on energy resources. What caused that energy crisis was, basically, a decreased supply and increased demand. A voracious and sometimes wasteful user of energy, the United States accounts for one-third of the world's current consumption of petroleum. Our economy revolves around crude oil and its products—a need for which increases at a rate of about three per cent each year.

The natural resources used to create energy are being depleted at a steadily increasing rate. Since the discovery of crude oil in this country around 1900, we have used up nearly 50 per cent of our oil reserves. Experts estimate that — at present consumption levels — we will run out of domestic oil, including Alaskan reserves, within 30 years.

"In 1973, Canada and Venezuela provided the U. S. with what we termed secure energy sources, but now they too are looking to their own national needs and, understandably, are backing away and reducing their level of petroleum exports," CDR Furiga explained.

Sixty per cent of the world's known reserves of crude oil are in the Middle East. The sudden embargo jolted many Americans into the realization that the U. S. depended upon those countries for one-third of its needed crude oil.

"That figure has since increased to 40 per cent. We are now more than ever dependent upon foreign countries, especially Nigeria and Saudia Arabia, for our energy sources," said the Commander.

"We've gotten to the point where we must find ways to decrease energy usage, but not our readiness. For instance, we've found that a destroyer out of overhaul for 24 months uses 16 per cent more thrust horsepower to reach 20 knots and 15 per cent more fuel because of marine growth on her hull. One aspect of our conservation program involves finding a way to get that ship's hull economically cleaned sooner, or developing a coating that will keep the growth from forming, and not cutting down on operations," he stated.

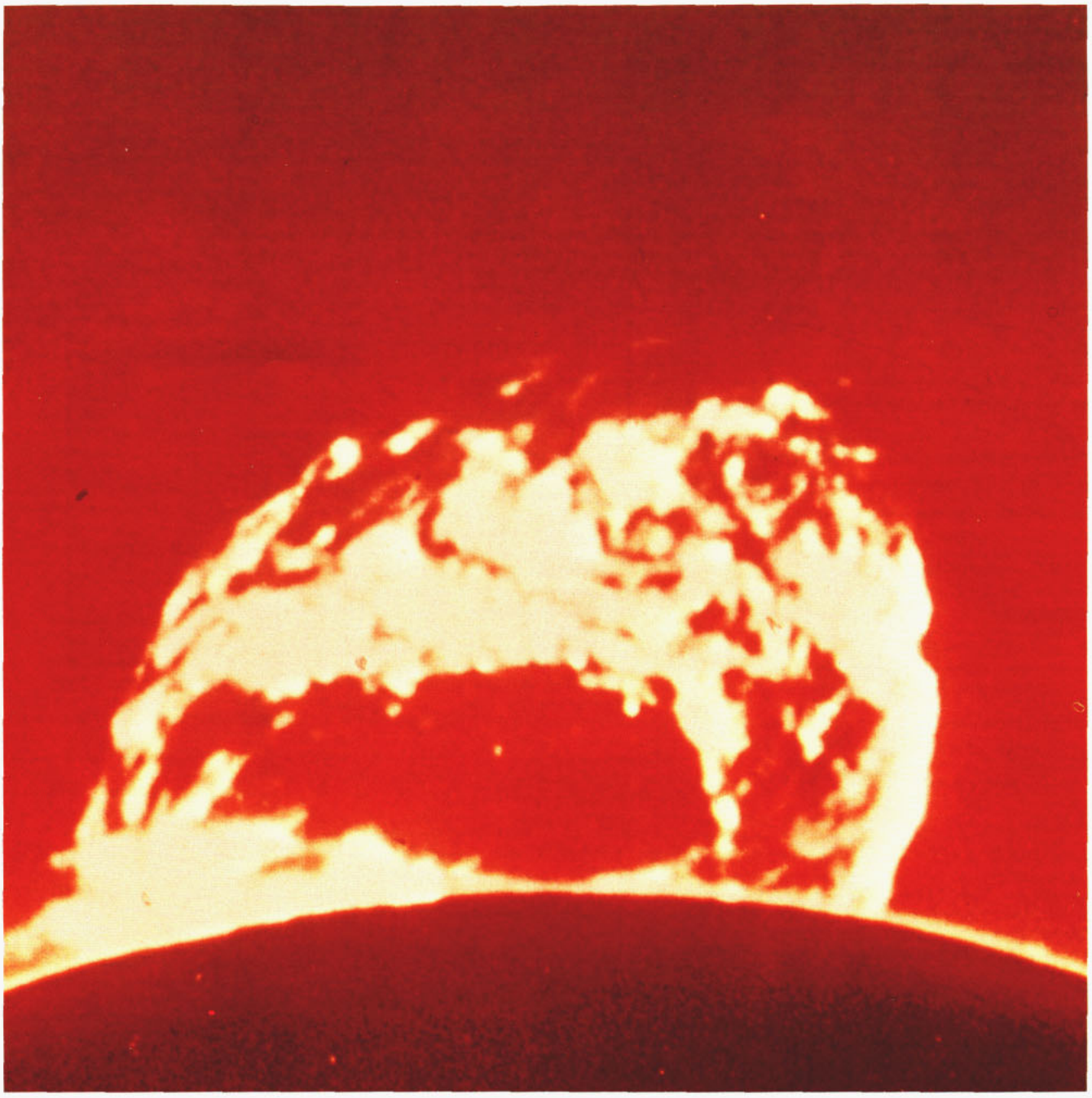
"But conservation is only a temporary answer," the Commander continued. "The nation and the Navy are well aware that other sources of energy must be found."

As landlord to over 90,000 families (housing units), paying more than $51 million each year just for utilities, the Navy requires not only fuel for a future fleet, but also an inexpensive form of domestic energy.

"Initially, we pushed conservation to produce quick savings in the emergency situation. But, we are down to a point now where we've got to do some major investing in alterations, retrofits, and the like, to get any more savings," Furiga explained. "Just part of that investment for the future includes synthetic fuels and natural energies such as the sun, wind and the earth's heat (geothermal).

"The energy program in the Navy was fragmented. We had consumers who needed the energy, logisticians concerned with supply, comptrollers interested in budgets and engineers involved with projects. What was needed," the commander continued, "was something to bring it all together. That's why the CNO Energy Office was established."

The office was formed under the Deputy Chief of Naval Operations for Logistics to provide an overall, servicewide coordination of energy programs. "One of our initial ef-



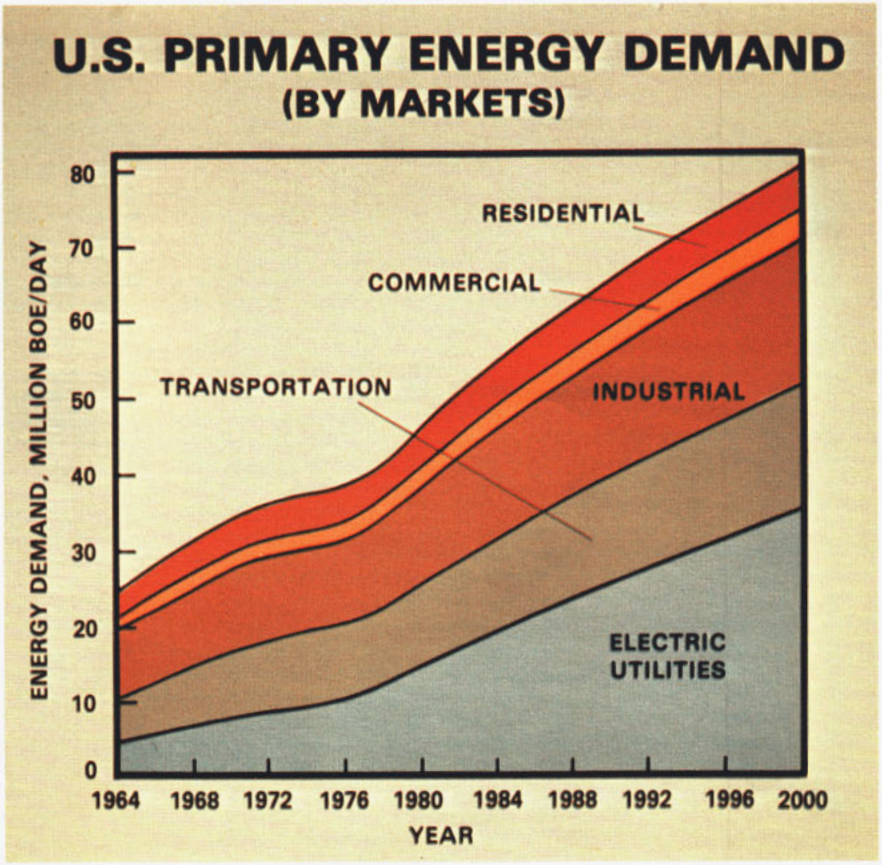
Sunspot activity reveals potential solar energy.

forts was to come up with a plan that answered the question: 'What should the Navy be considering to prepare for a future era of scarce energy resources'?" Furiga asked.

"Once that plan was formulated, we had to be able to provide for a continual review, for what holds true today in the energy situation may not be true tomorrow."

The Navy energy plan has, basically, five strategies—conservation, synthetic fuels, self-sufficiency, energy management and resources control. Synthetic fuels is one strategy receiving increased attention. The Navy is watching closely the development of a synthetic fuel produced from coal, oil shale and tar sands.

Before the discovery of crude oil in the U. S. 75 years ago, coal was used for 90 per cent of our nation's energy needs, including Navy ships. Even now, the U. S. has vast reserves of coal—three times that of



the combined Middle East oil reserves.

But coal has distinct disadvantages; for one, when burned, it pollutes the air. In the 1960s, when the push was on for cleaner air, Navy installations decreased the use of coal in favor of clean-burning, easily accessible natural gas and oil.

"The systems were inefficient, but when we were purchasing oil at three cents a gallon, it didn't really matter. Now we are paying 30 cents a gallon in some cases and it does matter," Furiga said. With costs expected to spiral even higher, the Navy is once again looking to coal in the form of a synthetic fuel.

Unbelievable as it may seem, fuel gas from coal was processed almost 200 years ago. As recently as World War II, on the other hand, a major part of the German armed forces was fueled with liquid coal. At that time, Germany had several synthetic fuel plants producing about 100,000 barrels a day. Since then, the use of coal as a synthetic fuel has dwindled. It was generally considered too costly.

But that was in another era. Today liquid coal could be part of the answer to the energy problem. Many new processes have been developed using coal and the U. S. actually could be producing liquid fuel on a commercial level within the next few years.

Ranking second to coal as the most abundant source of nonpetroleum fossil fuel is oil shale. But, like

Left: Experimental solar collector at Naval Ammunition Depot, Hawthorne, Nev. Above: Refineries, as this in Canada, convert tar sands into crude oil.

liquid coal, oil shale also was considered too expensive to process. Today, the production of shale oil has become a valuable area of exploitation.

"Oil shale crude can produce a range of distillate fuels, such as those used as jet or diesel fuel," explained Furiga. "Fuel derived from coal provides a usable grade of gasoline but is not suited for uses as a distillate fuel without extensive refining. So the Navy's primary interest in synthetic fuels deals with oil shale. The thrust of the Navy program is to ensure that synthetic fuels derived from oil shale are compatible with our propulsion systems."

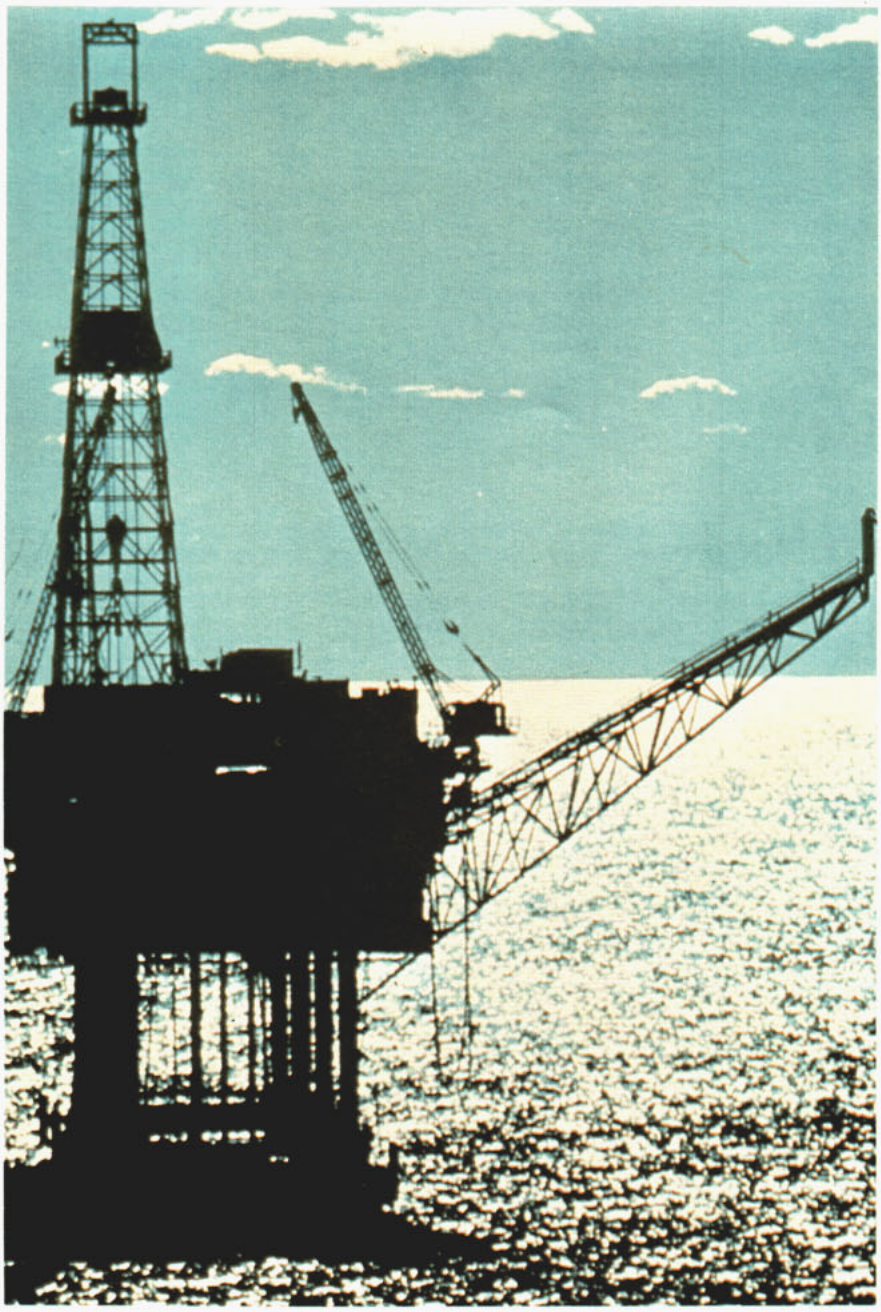
The oil, kerogen, contained in shale, is believed to be a form of undeveloped crude oil. However, in the case of kerogen, nature didn't provide the heat and pressure which would have converted it to oil. Modern technology, however, has allowed man to take up where nature left off. Estimates on the amount of shale-derived crude oil potential range from 1.8 to 2.2 trillion barrels—substantially enough to offer another long-range solution to the fuel shortage.

A third significant source of synthetic crude is tar sands, a mixture of sand, water and an organic bituminous material. Tar sands are found in the U. S., but efforts to recover oil from the material have been limited.

Synthetic fuels aren't the only alternative. Man has already devised ways to use the power of the source of all energy—the sun. One of the projects dealing with solar energy involves the refitting, by the Naval Facilities Engineering Command (NavFac), of 15 housing units at San Diego and Twentynine Palms, Calif.; New Orleans, La.; Charleston, S. C.; and New London, Conn.; with solar energy systems. These will provide homes with 60 per cent of their space heating requirements and about 90 per cent of their hot water, supplementing conventional systems. Technical and cost data from this experiment will be incorporated with other studies to provide a basis for future use of solar heating systems.

The Civil Engineering Laboratory at Port Hueneme, Calif., will be running a project almost concurrently with NavFac. This study deals not only with solar energy but also other forms of energy savers such as windpower. The lab plans to start from the ground up, building a model structure (resembling a home, small office or other facility), using energy-saving construction materials and techniques. The structure, called an Advanced Energy Utilization Test Bed, will feature such items as collapsible interior partitions that can be arranged to

Right: Offshore drilling for one of many energy sources. Below: Geothermal well at China Lake, Calif. Below right: Vast reserves of coal in the U. S. are strip-mined.



"The Navy plans to harness ...internal heat of the earth"

suit different tests and removable wall panels to facilitate changing insulating materials.

Several different projects are planned for the Port Hueneme structure. A few of these are testing solar heating systems, windpower, heating, ventilation and air-conditioning equipment and lighting.

The Civil Engineering Laboratory plans to test a variety of solar collectors with as many as four different types on the roof of the structure at the same time. Each system is capable of heating the entire building, but the laboratory's job will be to decide not if they work, but which one would be more suited to the Navy's needs.

In addition to harvesting the sun's energy, the engineers plan to construct a 40-foot tower near the test bed to catch the wind, using a 16.5-foot propeller to power a five-kilowatt generator. The generator is large enough to provide electricity for some of the experiments. Although Port Hueneme is considered a poor area to depend upon for constant winds, the experiment will demonstrate the applicability of wind as a power source. After control systems are developed for the tower, testing will continue at windier sites.

Experiments with lighting are also planned for the test bed. Nearly all residential lighting in Navy housing units is by incandescent light, which consumes over 16 per cent of the energy used in a home. Fluorescent lighting is twice as effective in terms of energy conservation, yet is unpopular because of the "cool" color it emits. Just a few of the many tests planned will deal with this problem. One way engineers hope to correct the complaint is through semi-direct/indirect lighting; in another way, illuminized reflective surfaces will scatter the light. The lab also plans to study ways to make better use of daylight. Working with University of California laboratory engineers, they will install a limited number of special windows to test window coatings, adjustable overhangs, reflective ground surfaces beneath windows, and several other techniques.

Throughout the project the structure will be closely monitored by an array of devices, some of which have been modified to fulfill the conservation objective. One, an infrared scanner, has been used successfully in a conservation program concerned with locating and correcting energy losses. The portable, hand-held scanner uses a device resembling a TV camera to produce an image that can be photographed or transferred onto a magnetic tape, depending on how the device is set up. That photo (or tape) can be translated into temperature—dark spots indicate cold, and white spots, heat.

Recently, the unit was used to detect air-conditioning losses in a desert housing area, locate an insulation breakdown in a buried steam line and pinpoint hot spots in a power line substation. Since 30 per cent of all energy consumed is wasted, the scanner should prove invaluable in lowering that figure.

Another natural source of energy the Navy plans to harness is geothermal, the internal heat of the earth. A project at the Naval Weapons Center, China Lake, Calif. involves sinking a well to 17,000 feet to tap the earth's underground reserves of energy in the form of steam. Topped by an energy converter to change the raw power into usable electricity, the well is expected to provide enough electrical power to completely supply the China Lake installation and supplement surrounding communities' sources.

As the Navy enters its third century, it faces a unique problem—coping with the world energy situation. As CDR Furiga summarizes, "It's time to decrease our dependency upon other nations. The Navy is actively involved in doing its part to decrease this dependency, aiming all the while at maintaining that all-important fleet readiness." ⚓

Choking:
RECOGNIZING SYMPTOMS

BY LT STEVEN R. SCHELKUN, MC

Since 1974, the "Heimlich Maneuver" has become another emergency first aid and lifesaving technique that has the potential to save lives daily. Named for its inventor, Dr. H. J. Heimlich, it is a technique for the prevention of death from choking on food, sometimes called "cafe coronary," since these accidents usually took place in eating establishments and the symptoms mimicked those of a heart attack. Further research showed that many died, not from a heart attack, but from asphyxiation caused by food lodged in the windpipes.

The "Heimlich Maneuver" can dislodge those food particles and allow the victim to breathe. It is an emergency first aid technique that anyone can learn to use effectively once he knows the symptoms of a choking victim.

Food choking is easy to recognize, usually occurs in a restaurant or at home during mealtime. The victim is suddenly unable to speak or breathe. He first becomes pale, then turns a deeply flushed shade of red or purple and then collapses. Without emergency aid death occurs in four to five minutes. Frequently the victim will clutch at his chest from lack of air. Acute heart attack victims will clutch their chests but from pain. This is why cafe coronary deaths were at first attributed to heart attack.

The important difference is that a heart attack victim has a clear airway and can breathe and talk. A choking victim, however, cannot talk.

As a result, Dr. H. J. Heimlich has proposed a universal sign of distress that the victim can use and that the rescuer can recognize.

The victim should grasp his neck between the thumb and index finger of one hand to indicate that he is choking on food (see drawing).

The technique required to dislodge the food involves simply pushing on or squeezing the abdomen. This pushes the diaphragm up into the rigid chest cavity, increasing the pressure of the air in the lungs until it is great enough to pop the piece of food out of the trachea into the throat where it can be reached and removed.

If the victim does not resume breathing spontaneously Cardiopulmonary Resuscitation (CPR) should be instituted and a physician called.

The "Heimlich Maneuver" can be applied to an unconscious person lying prone or to a standing victim before he collapses into unconsciousness. With the victim standing, the rescuer:

- Stands behind the victim and wraps his hands around the victim's waist.
- Grasps his fist with his other hand and places the thumb side of the fist against the victim's abdomen, slightly above the navel and below the rib cage.
- Presses his fist into the victim's abdomen with a quick upward thrust, repeating several times if necessary.

When the victim is sitting, the rescuer stands behind the victim's chair and performs the maneuver in the same manner. ⚓

Mail Buoy

'For the Navy Buff'

SIR: The June 1976 issue contained a section entitled "For the Navy Buff" in which one of the questions and its answer depicted USS *Bonefish* (SS 582) as "the last noncombatant diesel-electric submarine built by the U.S. Navy."

Bonefish was indeed the last diesel-electric sub built by the Navy, but the term "noncombatant" is in error. Rather than going into detail about her accomplishments, let me simply state that USS *Bonefish* is indeed capable of waging war.—LCDR J. R. McCleary, CO, *Bonefish.*

● *We have already been reminded by a few other alert readers that* Bonefish *is, indeed, a combatant.*—ED.

Raising of Right Hand

Sir: Why do Navy people raise their right hands when being sworn into the service or reenlisting?—A. R. H.

● *This custom, common to both civilian and military personnel, is one of the oldest on record. It originated in the early days of sailing. Criminals were branded on the palm of their hands and prohibited from testifying in court or assuming positions of responsibility. Seamen entering the Navy raised their right hand, palm outward, to show they were trustworthy and did not have criminal records.*—ED.

Farragut Means 'Horseshoe'

SIR: "Spanish Heritage" appearing in the September issue makes no mention of David Glasgow Farragut, the first four-star admiral in the U. S. Navy. "Damn the torpedoes" was a native of Ciudadela, Menorca, in the Balearic Islands. His name means "horseshoe" in the dialect of that locale. I think ADM Farragut was too important to leave out of an article dealing with Navy people of Spanish descent.—CAPT C. I. Stratmann, USN

● *Checking the records we found that David Glasgow Farragut was born July 5, 1801, at Campbell's Station, near Knoxville, Tenn. He was brought up as a ward of Commander David Porter and entered the Navy as a midshipman in 1810.*

It was Farragut's father, George, who was born at Ciudadela, Menorca (Sept. 29, 1775). Seems the father served in the Continental Army, the Navy of South Carolina, and later the U. S. Navy—dying in 1814. Either way, we should have mentioned the admiral in the wrap-up and mentioned his father as well.—ED.

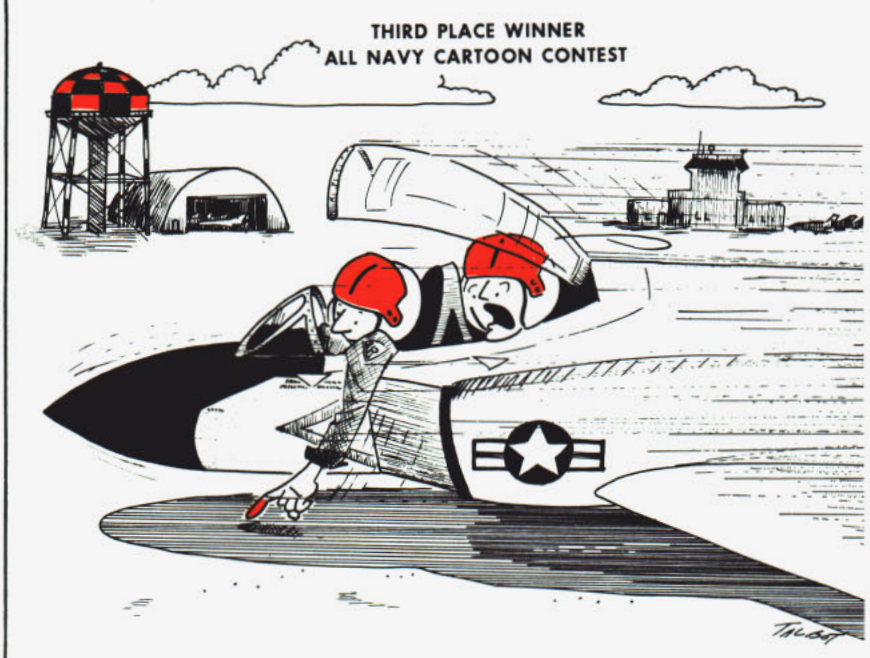
Souvenir Hunting

SIR: Regarding your August '76 article, "Authorized Souvenir Hunting," I recall reading an article about 10 years ago about an AFT going through refresher training that required a part for its antiquated main battery. The gunner on board recommended the Amphibious Museum display as just what he needed and, with much publicity on someone's part, received permission to cannibalize the gun. I would venture it was a bushing he needed.—LCDR G. H. Coshow.

U.S. Flag Over Others

SIR: On the cover of the September issue, the Ceremonial Color Guard didn't carry the U. S. Flag above the other flags. It seems to me that someone made a mistake. I was under the impression that the national colors were always flown highest.—YN3 L. Spencer.

● *When the U. S. Flag is paraded by a color bearer along with other flags (as depicted on the All Hands cover), the position of honor is to the right and not above the others. During honors or the playing of the National Anthem, the Marine and Navy colors will be dipped, but the U. S. flag may never be dipped.*—ED.



Cartoon by DM3 Daryl Jay Talbot, USN.

Stern Shots

Each of the eight silhouettes shown is a ship of the Soviet Navy. See if you can match all of them with their proper class-types which are listed below. Be extra careful this month as there is one class-type listed which doesn't have a corresponding profile.

Answers appear below.

_____ 1. Moskva
_____ 2. Kara
_____ 3. Delta
_____ 4. Nanutchka
_____ 5. Kashin
_____ 6. Kresta
_____ 7. Victor
_____ 8. Kuril
_____ 9. Kynda

A 

B 

C 

F 

D 

G 

E 

H 

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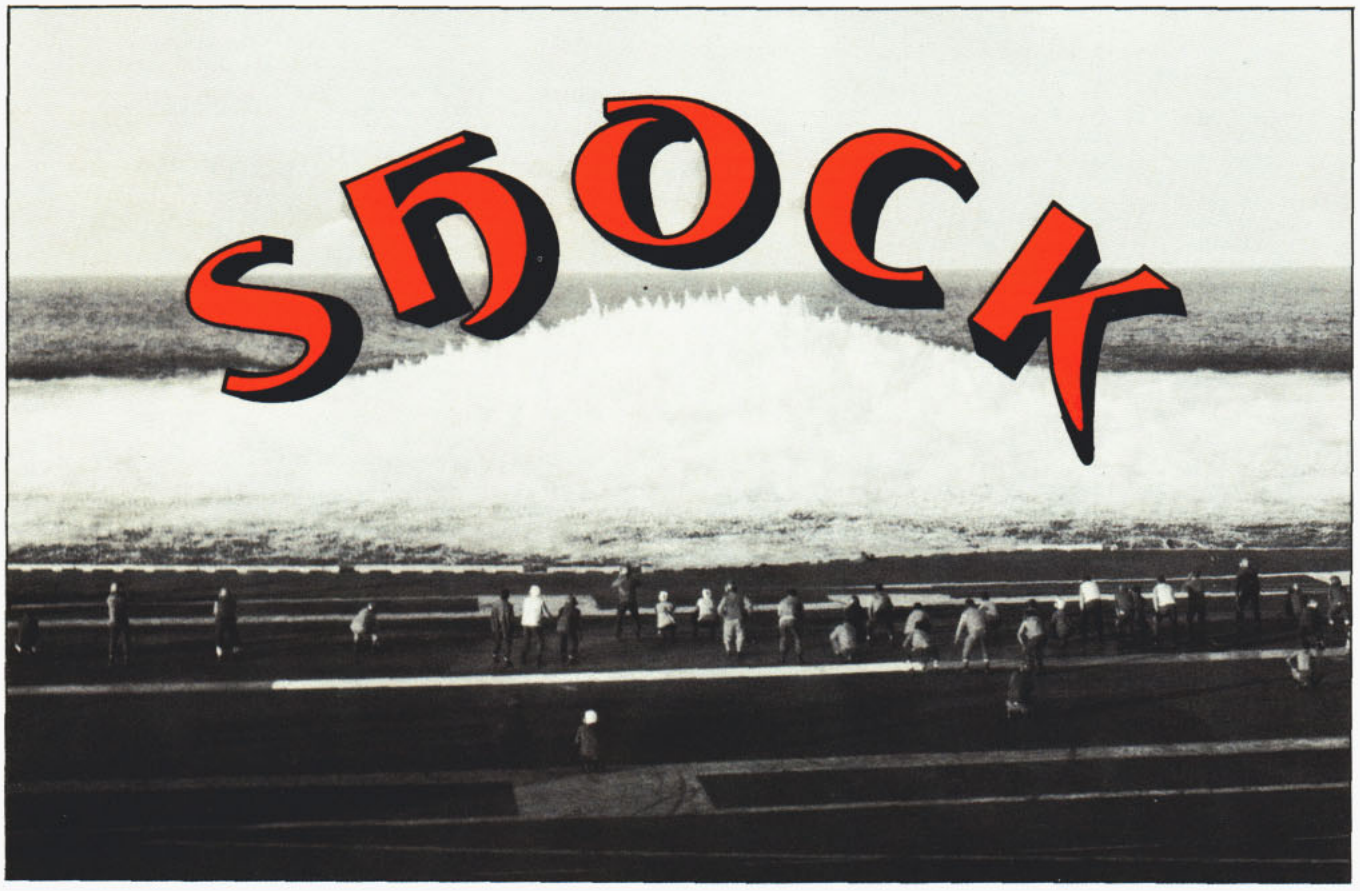
Answers to quiz: (e) 9; (b) 8; (h) 7; (none) 6; (g) 5; (c) 4; (a) 3; (f) 2; (d) 1

FORRESTAL TESTS FOR SHOCK



The crewmen experienced the first explosion shortly after manning their battle stations. A second detonation came later, temporarily knocking out lights and other equipment and causing the large ship to roll noticeably. During a two-day period last summer, the Atlantic Fleet carrier USS *Forrestal* (CV 59) was subjected to three explosions.

This was the first shock test conducted on an operational large deck carrier and was the latest of a continuing program designed to improve warship survival under combat conditions. Similar tests have involved USS *Spruance* (DD 963), lead destroyer in her class.

The carefully controlled test directed by the Naval Ship Engineering Center involved detonating large, high-explosive charges at predetermined distances and depths from *Forrestal.* The explosions realistically simulated the combat environment associated with an attack by both conventional and nuclear underwater weapons. Technical personnel directing the test described the shock intensity experienced by the crew as that of "jumping off a curb with a jolt coming from below."

Before the test began, a thorough check for loose gear was made; aircraft and helos were secured by standard tie-down procedures; the engineering plant was set up for battle conditions. Each test was accurately monitored by more than 100 channels of special instrumentation, including high-speed photography of selected areas.

Initial evaluation and analysis of the explosions was done on board *Forrestal* following each test. The data will be used to check existing practices and establish an engineering data base for more efficient shock hardening of large deck aircraft carriers and other large displacement ships.

As a result of the test, modifications designed to increase combat survivability of *Forrestal* and other aircraft carriers are now being implemented. ⚓

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